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THE
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THE
ARCHITECT
AND
Contract Reporter.

A WEEKLY
ILLUSTRATED JOURNAL
OF
ART,
CIVIL ENGINEERING,
AND
BUILDING.

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> "*Wo die toten Menschen schweigen, da sprechen desto lauter die lebendigen Steine.*"—LUDWIG BÖRNE.

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THE
ARCHITECT
AND CONTRACT REPORTER.
A JOURNAL OF ART, CIVIL ENGINEERING & BUILDING.

THE WEEK.

Glasgow should be busy next year. In the first place, the International Exhibition will be opened, and as it is likely to contain many objects which should have gone to Paris if the French people had not forfeited their reputation for good sense, as well as many objects which are now being exhibited in Paris, the collections must be unusually attractive. Then the University of Glasgow, which was founded 450 years back, is to celebrate its ninth jubilee, when representatives of science, art and scholarship from all civilised countries will be invited to attend. Some time ago it was arranged that in 1901 the British Association for the Advancement of Science would meet in Glasgow. All these events must whet the interest of the city in intellectual work. Glasgow holds its position in manufactures through science, but nowhere in the empire is art more esteemed. Unlike other places, there is no opposition between the two. For example, Sir Francis Powell, the painter, when speaking at the meeting where arrangements were made for receiving the British Association, said that science was the greatest aid to artists, for it gave them a knowledge of colours and materials. The water-colour painters, of whom he could be considered a representative, were also at present looking to science for the means to be protected against bad paper. What was now used was useless for preserving what the artist had placed upon it, and it was hoped that attention will be attracted to the mischief. If Sir Francis Powell's desires can be satisfied, the Glasgow meeting of 1901 will be one of the most important in the history of the British Association.

By the death of Mr. James Doulton on Saturday last the great industrial enterprise of the Lambeth Pottery has lost one of its principal administrators, who had aided in building up a business which has become one of the greatest in the Empire. The development of the Doulton Potteries must be considered by the future historian of English trade as almost amazing. Doulton ware created a new market. Beginning with rivalry of the old Flemish potters, it expanded into many branches, and a school of artists was created having characteristics which made their work easily recognisable in any collection. The terra-cotta sculpture was, if possible, more remarkable than the painted and incised ware. Then the sanitary department was extended on lines which few could have foreseen, and science was as marked in it as art was in the other classes of productions. In all the efforts the late Mr. James Doulton bore an important part, and to his efficiency and commercial insight much of the success was owing. A true leader of industry, he shared in the victories as in the toils of his brothers and of the able men they gathered around them.

In all our remarks on the Celtic ornaments lately acquired by the British Museum we have advocated that in the interests of archæology they should be allowed to remain where they are at present. If the Irish people were anxious to prove to the world the excellence of the work of their early artists, they could not make a better arrangement to attain that end than by depositing evidence in a museum which is visited by specialists from all lands, and where the Celtic examples could be compared with some from various regions. It is only amidst collections which are representative of the arts of antiquity that the true value of Irish work can be determined. We are glad to find that the Society of Antiquaries has taken a similar view of the case, for at the last meeting it was unanimously resolved:—"That the Society of Antiquaries of London, which takes a keen interest in all matters connected with the archæology of these islands, views with marked dissatisfaction the proposal to remove from the British Museum certain gold ornaments lately acquired from Ireland. The Society is of opinion that the cause of archæology will be best served by the retention of these interesting objects in the central museum of the Empire, where they are accessible to a greater number of students than would be the case elsewhere; while as remains of the art of the ancient Britons, and having only an accidental connection with Ireland, these relics could be placed nowhere more appropriately than in the British Museum." It cannot be supposed the members of the Society of Antiquaries are unable to be impartial in dealing with the subject, and we hope the resolution will persuade the Government to retire from the position which was so rashly assumed, and which must have amazed archæologists throughout the world.

In "Love's Labour's Lost" King Ferdinand says, "Navarre shall be the wonder of the world; Our court shall be a little Academe, Still and contemplative in living art." Shakespeare is studied with more attention in Germany than in England, and it would appear as if the Grand Duke Ernst Ludwig had taken the words to heart, and had resolved to realise them in Darmstadt. It would not be possible, we suppose, to transform a German court, with all its formalities, into an academy of art, but the prince has resolved to establish a small but independent court where art is to be supreme. For that purpose he has assigned a part of one of the royal parks, in which many ancient trees increase the picturesqueness, as the site of an artistic colony which at present will be unique. The principal building will be the Ernst-Ludwig-Haus, of which the first stone was laid on March 24. It has been formally devoted to holy purposes as if it were a church, for it is intended to serve art, which will be a new and individual art, which will be serviceable to humanity and explanatory of life, or, in other words, the "living art" of Shakespeare. The Prince and many advanced artists around him consider that such glass palaces and academies as exist in Munich and other German cities are not advantageous in promoting art. They lead to a competition for public favour, and a painter finally gives more attention to the movements of the market than to the expression of the thoughts with which he is inspired. Anyone who wishes to buy a picture of one of the colonists will have to seek it in the painter's studio. The members can remain apart from the crowds of Darmstadt without much inconvenience, for besides studios there will be a theatre, gymnasium, baths, &c., provided. At first the number of artists will be limited to seven, but there is enough ground for extensions if it should be considered advisable to make the experiment on a greater scale. The Grand Duke will be the protector, with Professor Olbrich as president. Many eyes will be turned to the Mathildenhöhe to watch the progress of the newest effort to attain a higher level in life and art.

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LICHFIELD CATHEDRAL.

(*See Illustration.*)

Anyone who attempts to enter into the history of the cathedral of Lichfield is puzzled at the outset by the difficulty of discovering why a cathedral should be erected there. The most usual explanation given is that Lichfield means the Field of the Dead, and that at the spot in the time of Roman persecutions St. Amphibalus and a thousand of his fellow Christians were martyred. But doubts have been cast upon the authenticity of the tradition. Venerable Bede mentions Lichfield as an Anglo-Saxon bishopric, the diocese of Lichfield and Coventry forming a part of the kingdom of Mercia. Christianity was, it is said, introduced in A.D. 656 into Mercia. Four prelates are mentioned as ruling the see in succession—Diuma, Cellach, Trumhere and Jaruman. Then followed Ceadda, who, as St. Chad, is an important figure in the ecclesiastical history of the Midlands. "Ceadda," says Bede, "had his episcopal see in the place called Lichfield, in which he also died and was buried, where also the see of the succeeding bishops of that province still continues. He had built himself an habitation not far removed from the church, wherein he was wont to pray and read with a few, that is, seven or eight of the brethren, as often as he had any spare time from the labour and ministry of the Word." He was bishop for no more than two years, and died in 670. Whether it was his reputation or that of Amphibalus which gave fame to the place cannot be ascertained, but the necessity for a bishop in that district is not now evident. In the course of the next century it is supposed that the diocese was subjected to many changes, as if to adapt it to the circumstances of the place. At one time the area was reduced, at another it was enlarged, and there was even a project of exalting it to an archbishopric. After the Norman Conquest the see was removed to Chester, and subsequently to Coventry. Roger de Clinton was consecrated bishop in 1128. He took the title of Bishop of Lichfield and Coventry. For years there seems to have been no precision in the name of the diocese; sometimes the bishop was satisfied with the title of Lichfield, or Coventry, or Chester, sometimes Coventry and Lichfield, sometimes it was Lichfield and Coventry. The precedence in the names was not insignificant, for it indicated a struggle between the towns, and which of them for the time happened to be more influential. We have referred already to the contests between Bath and Wells about the right of electing bishops, and similar scenes were to be witnessed in Coventry and Lichfield. The opposition between the monks and the chapter was at one time likely to leave the bishop's chair unoccupied for an interminable time, and Pope Honorius III. therefore prevailed on both parties to allow him to select a bishop. On another occasion Pope Gregory IX. succeeded in persuading the electors to form themselves into one body, and to agree to the elections being held alternately in Coventry and Lichfield.

In no diocese in England was there more interference by the Roman authorities. In one case we read of the appointment by the Pope of administrators during the suspension of the bishop. At another time the Pope approves of the union of a church with the Deanery of Lichfield. The Abbot of St. Mary's and the Chancellor of York are appointed to deal with a dispute between the Dean and Chapter of Lichfield and the Prior and Convent of Lenton concerning tithes. These disputes, which now appear to be so petty, seem to be endless, and copies of some of the deeds will be found in the reports of the Historic Manuscripts Commission. Unfortunately, while so much is recorded concerning the financial affairs of the clergy and the monks, their respective privileges and spiritual jurisdiction, no information is forthcoming about the building of the cathedral. In the ordinary sense of the term there is no acceptable history of Lichfield Cathedral.

There can be no question, however, after what is said by Bede, of the existence of one or several churches at Lichfield in which the bishops presided. There was also a Norman building, for fragments of it are to be found beneath the existing buildings. Professor Willis, who was enabled to make excavations in the cathedral in 1860, came to the conclusion that a Norman church was built in the twelfth century, and that it had a semicircular apse, in the centre of which was the altar, with the bishop's chair behind it as in the earlier basilicas. There is no record to testify to the builder. Roger de Clinton was bishop in 1128, and he must have taken some part in building, for it is said in "Anglia Sacra" "he raised the church of Lichfield as well in fabric as in honour; increased the number of the prebends, fortified the castle of Lichfield, surrounded the town by a wall or vallum, and infeoffed knights." The information is very scanty, but that defect is not peculiar to Lichfield.

In the beginning of the thirteenth century Norman architecture was growing out of favour, and it was to be superseded at Lichfield. How the money was raised which was necessary for such an undertaking is not clear. Stone was, however, available. The Forest of Hoppwas, which was very extensive, lay south of the city. The Dean and Chapter were able in 1235 to obtain a license from Henry IV. which permitted them to dig stone in the forest for the fabric of their church. A precept was issued to the Sheriff of Staffordshire ordering him not to impede the workmen. In 1238 Hugh de Loges, the keeper of the forest, was directed to allow the canons to dig more stone from the same quarries to carry out the works at their church. But it is impossible to say whether the stone was required for a new building, or for the renovation of one which then existed, or for its completion. It has been supposed that in the beginning of the thirteenth century the existing choir was commenced, and that the walls were built outside those of the Norman choir. Subsequently, it is inferred, the south transept was erected, and then followed the north transept. The west front may have been undertaken in the last quarter of the century, but the completed work, including the spires, was not likely to have left the builders' hands before the middle of the fourteenth century. John Britton, who took some pains in examining all that had been written on the subject, says:—"We have very satisfactory evidence that the lady chapel was raised by Bishop Langton about 1300. The central and western towers and spires were erected very nearly at the same time. An alteration appears to have been next made by inserting a new and enlarged tier of clerestory windows into the choir, most probably in the early part of the reign of Edward III." Fuller, in his "Church History," considers the cathedral did not attain completion until the episcopate of William Heyworth, who was consecrated in 1422. His words are as follows:—"But now in the time of the aforesaid William Heyworth, the cathedral of Lichfield was in the verticall height thereof, being (though not augumented in the essentials) beautified in the ornamentals thereof. Indeed, the west front thereof is a stately fabric, adorned with exquisite imagerie, which I suspect our age is so far from being able to imitate the workmanship, that it understandeth not the history thereof. Surely what Charles V. is said to have said of the citie of Florence, that it is a pity it should be seen save only on holy dayes; as also that it was fitt that so fair a citie should have a case and cover for it to keep it from wind and weather, so, in some sort, this fabric may seem to deserve a shelter to secure it." The suggestion about enclosing ancient buildings with glass could not be then realised on account of the expense of that material. It would now be practicable, and in a more enlightened age buildings, or what is left of them, will be sheltered in that way. In the case of Lichfield a covering was more needed than elsewhere, for the red stone employed in the masonry is not enduring.

From what we have said it will be evident that the ancient part of the cathedral as we see it was the work of less than a century. If the Norman part, which has been removed, be taken into account it will be found that as regards order in time there is a remarkable analogy between Lichfield Cathedral and the cathedral of York. The merit of this discovery is to be credited to Professor Willis. In his essay he says:—

> The Norman cathedral of York was built in 1080 and that of Lichfield at an uncertain date. Between 1154–81 Archbishop Roger substituted for the original chancel at York a long square-ended choir, with the aisle carried behind the end. At Lichfield during the same period the large chapel was built at the end of the northern apse; and about the beginning of the

thirteenth century the whole Norman eastern termination was, as at York, replaced by a long square-ended choir with low aisles behind. Next, at York the Norman transepts were rebuilt in Early English; the south transept, 1230-41, followed by the north transept, 1241-60. Also at Lichfield the Norman transepts were rebuilt in Early English, beginning with the south and ending with the north. The Early English work of this cathedral is shown by the licenses to dig stone to have been in progress in 1235 and 1238. York nave and Lichfield were next rebuilt in Early Decorated, the first in 1291-1324. Lastly, at Lichfield the elongation of the eastern part was begun at the extreme east, beyond the existing choir by the lady chapel, in Late Decorated, under Bishop Langton, 1296-1321, and followed by taking down the choir and continuing the same work on its site westward. The works at York followed in the same order, but forty or fifty years later, by first erecting the presbytery outside the existing choir, and then taking down the latter and continuing the work of the presbytery to form the new choir. The plans of the two cathedrals rival each other in the simplicity of their proportions.

In fact, the history of Lichfield Cathedral must be made out from the variations in the architecture, for of the men who directed the works nothing is known. The inquirer in such cases resembles the geologist, as he has to trust entirely to the remains which happen to have survived. Little is known about the cathedral for about 150 years, or between the erection of the library at the end of the fifteenth century and the siege of 1642. In the Civil War the contest was not, as might be supposed from romances, one between the classes and the masses. With the Parliamentarians were peers like Fairfax, Essex and Brook. The last seems to have been crazy in his hatred of great churches, and when it was known that in Lichfield some Royalists had collected, it was with more than a warrior's ardour he undertook the attack on the city. His guns were planted against the south-east gate of the Close, and he entered a small house close by in order to direct his soldiers. He was encased in plate-armour, but "Dumb Dyott," who had been placed with another man in the battlement of the steeple, having fired, struck Lord Brook in the eye, who fell dead. The event occurred on March 2, 1643, which, it appeared, was the feast of St. Chad, to whom the cathedral was dedicated. His death did not cause the siege to be raised, for it was continued under the direction of Sir John Gell, and after three days the place was surrendered to the Parliamentarians. On gaining possession of the cathedral the excess of vandalism which followed was enough to prove that men under the influence of religious frenzy cannot be controlled by reason. Everything that was breakable was destroyed, not only the monuments, the images, the brasses, the painted windows, but even the records shared a common fate. The graves were violated as soon as a crozier was discovered in one of them. According to Dugdale, the troops "every day hunted a cat with hounds through the church, delighting themselves with the echo from the goodly-vaulted roof, and to add to their wickedness, brought a calf into it wrapt in linen, carried it to the font, sprinkled it with water and gave it a name in scorn and derision of that holy sacrament of baptism." If time allowed Lichfield Cathedral might have been destroyed, like its fellow building in Coventry, which vanished by command of Henry VIII. But in the course of a month Prince Rupert and his cavaliers undertook another siege of the Close, and after ten days the garrison capitulated. Dugdale says that Colonel Russel, the governor, carried off the communion plate and whatever was of value and portable in the cathedral. There were other contests over Lichfield during the Civil War, and the cathedral could not be considered safe until after the Restoration, for during the Protectorate not only lead but timber were stolen from the building.

At the end of 1661 Dr. John Hacket, of Trinity College, Cambridge, received the appointment of bishop. He realised the onerous task which was before him. According to his biographer:—"The very morning after his arrival in Lichfield he roused his servants by break of day, set his own coach horses with teams and hired labourers to remove the rubbish, and laid the first hand to the work he had meditated. By his large contributions, the benefactions of the Dean and Chapter, and the money arising from his assiduity in soliciting the aid of every gentleman in the diocese and almost every stranger that visited the cathedral, he is said to have raised several thousand pounds. In eight years he restored the beauty of the cathedral to the admiration of the country." The subscriptions amounted to 9,092*l.* 1*s.* 7½*d.*, the bishop contributing 1,683*l.* 12*s.* Charles II. gave a hundred timber trees out of Needwood Forest, and the Duke of York furnished the money for the tracery of the west window. The church was reconsecrated on Christmas Eve in 1669.

A century afterwards several improvements were undertaken, one being, strange to say, the removal of the cathedral library. In 1788 money was sought to repair the dilapidations; but as the amount collected was inadequate, an Act of Parliament was obtained by which a cathedral fund was provided, and the accounts were settled for the reparation. The works were entrusted to James Wyatt, and he spent seven years in accomplishing changes which have been considered as irreverential as the havoc of the Parliamentary troopers. And yet the inventory of what was perpetrated, as given by Britton, does not appear to be the work of a vandal. According to that authority:—"Besides the general restoration of the doors, windows and flooring throughout, two of the spires were partly rebuilt, the ends of the transepts were strengthened with new buttresses, the external roofs of the aisles were raised, and five divisions of the stone roof in the nave were taken down and replaced with plaster. The lady chapel was united to the choir by removing a screen which had been erected by Bishop Hacket. On taking this away the workmen discovered the beautiful old screen which formed in all probability the original partition when the lady chapel was completed by the executors of Walter de Langton. This elaborate piece of architecture was in a very mutilated state; but Mr. Wyatt having restored it, by the assistance of Roman cement, to a very perfect condition, appropriated part of it to the new altar-piece and the remainder to the organ screen, or partition, which divides the nave from the choir." Wyatt's restoration has, however, made his name a byword. He was the most prominent among a great many men who were willing to operate on old buildings, although they were unable to realise the original condition which they professed to bring back. In addition to the works mentioned by Britton, it should be said that Wyatt filled up the side arches opening out of the choir into the aisles, or rather had a plain wall screen erected flush with the inner face of the arches. It has been said, however, that the innovation should be ascribed to Wren, but whoever was the culprit, the work was discreditable.

After Wyatt's death his spirit seemed to prevail with the cathedral authorities. Stucco and whitewash were liberally applied within and without. In 1856 Sir Gilbert Scott undertook the restoration of the building, and although of late years his efforts have been also condemned, it must be allowed that in a building which had been so often transformed and which had to be adapted to a different ritual, it was wiser to introduce innovations frankly than to attempt to make the new work appear as old. Every visitor can at once recognise the sculpture, metalwork and woodwork which belongs to the nineteenth century, and it cannot be denied that what is modern receives more admiration than what is ancient.

IN THE DAYS OF LORD TREASURER OXFORD.

Authors are justified when they glorify Anne's Augustan age. It was a period of honour and prosperity for them which was without precedent and which has had no successor. When it is remembered that no long time had elapsed since Otway died of starvation and the great Dryden was compelled to toil as a hack-writer, while in the following age Samuel Johnson was glad when he had fourpence a day to live on, and Chatterton preferred suicide to starvation, the riches and honours which rewarded literature under Queen Anne appear marvellous. The "Conspectus" prepared by Thackeray suggests the prizes which then awaited authors. Addison, among other appointments, was the Secretary for Ireland and one of the Secretaries of State. Steele, with all his improvidence, was a Commissioner of the Stamp Office and of the Forfeited Estates in Scotland. Prior, after filling various secretaryships, ended as Ambassador to France. Tickell was Under-Secretary of State and Secretary to the Lords Justices of Ireland. CONGREVE held various commissionerships and other lucrative offices. GAY was secretary to an ambassador. The terrible JOHN DENNIS, who could only write libels, had an appointment in the Custom House. All that was necessary in those halcyon days, as THACKERAY says, was to compose a neat copy of verses bemoaning the death of some great personage or complimenting Prince EUGENE, "and the party in power was presently to provide for the young poet; and a commissionership or a post in the Stamps, or the secretaryship of an Embassy, or a clerk in the Treasury came into the bard's possession." The reign of Queen ANNE, as represented by THACKERAY, MACAULAY and others, appeared so delightful that what was said about literature was supposed to be no less applicable to other varieties of intellectual labour, and in consequence an almost glorified character has been imparted to it by later Englishmen.

What is true of literature is not however true of art. From the confidence with which a Queen Anne style of architecture is mentioned, it is difficult to persuade people that in Her Majesty's reign no peculiar style was invented or established. The red brick architecture which has been of late so extensively patronised, with more reason could be credited to WILLIAM III. The great architect of the time, Sir CHRISTOPHER WREN, can with most justice be claimed by the period of the Restoration. VANBRUGH is to be considered as a representative of architecture, but he acquired his style before the Queen wore the crown. WALPOLE not unfairly sums up the character of the Augustan period as a promoter of art when he says:—

> The reign of Anne, so illustrated by heroes, poets and authors, was not equally fortunate in artists. Except Kneller, scarce a painter of note. Westminster Abbey testifies there were no eminent statuaries. One man there was who disgraced this period by his architecture as much as he enlivened it by his wit. Formed to please both Augustus and an Egyptian monarch, who thought nothing preserved fame like a solid mass of stone, he produced the "Relapse" and Blenheim. Party, that sharpened the genius of the age, dishonoured it too—a halfpenny print of Sacheverel would have been preferred to a sketch of Raphael. Lord Sunderland and Lord Oxford collected books; the Duke of Devonshire and Lord Pembroke pictures, medals, statues; the performers of the time had little pretensions to be admitted into such cabinets.

The difference in the treatment of literature and art may be accounted for by the same cause which made the print of Dr. SACHEVEREL be preferred to a drawing by RAPHAEL. The death of so strong a king as WILLIAM III. released political parties from restraint, and with so weak a ruler as Queen ANNE unlimited power seemed to be attainable by a statesman. Abroad advantage was taken of the condition of the country, and formidable wars had to be undertaken to preserve the greatness of England, or which was the same, to keep one set of men in power. At such a time the writer of satirical verses or a pamphlet was able to exert influence on the populace, and literature was prized because it could be utilised as a tool in politics. Art possessed no such power, and consequently it was neglected. Artists like HOGARTH, BUNBURY, CRUIKSHANK or TENNIEL, who could translate ideas into pictorial forms to be understood by all who had eyes, would in those days have become more influential than the fine writers, but that class of art was then almost unknown.

The impeachment of SACHEVEREL and his acquittal produced a remarkable effect. GODOLPHIN and SUNDERLAND were superseded by OXFORD and ST. JOHN. The last was too clever and too ambitious to be a complacent chief minister; his attempts to form a BOLINGBROKE party were unsuccessful, and the monopoly of power consequently fell into the hands of Lord OXFORD. If measured by the standard of the time, his political honesty was above the average. ROBERT HARLEY had distinguished himself in the House of Commons, and WILLIAM III., who was a shrewd judge of character, several times offered him high office. On the death of the king he became Speaker in the House of Commons, and Queen ANNE on her succession appointed him Secretary of State. As a consequence GODOLPHIN became jealous of him, and was aided by the Duke of MARLBOROUGH. Efforts were made to convict HARLEY of being in league with France, and at one time it was supposed he could not escape the usual punishment of high treason. In the end HARLEY gained. Afterwards an attempt was made to have him assassinated by GUISCARD, but that also did not prove fatal. The Queen was easily persuaded he was willing to be a martyr for her sake, and HARLEY became not only the ruler of England but the arbiter in European affairs.

As Lord Treasurer he had the control of English finances, and to him everyone who had a project and wished for aid from the public funds was naturally attracted. The applications, some of which have been preserved among his private papers, help to throw a light on the position of art in those days. One of the artists who invoked the power of HARLEY, Lord OXFORD, was JAMES GIBBS, of Aberdeen. Like the immortal DUGALD DALGETTY, he took his degree in Marischal College, and then went abroad to fight for fortune, not as a free lance but as an architect. He studied in Holland and in Italy, where he was fortunate in finding a patron in a countryman, Lord MAR, and after a time returned to England, where he obtained an introduction to the Lord Treasurer. GIBBS was one of those architects who rightly believe that the publication of drawings is an advertisement which leads to profit, but at the time the expense of engraving was great, and in order to gain aid he sent the following letter to Lord OXFORD:—

> From my lodging in Chandos Street.—I would willingly be doing something to establish my reputation here, by showing the world by demonstration that I know something of what I pretend I have learned while I was abroad, and by making this as advantageous as I can, till such time as your lordship shall think fit to provide for me. In order to this I have a mind to publish a book of architecture, which indeed is a science that everybody criticises here, and in all the countries that ever I was in never did I see worse performers. Be that as it will, this is my design, which I think to go about this summer if your lordship will encourage me by accepting the dedication and being at the expense of the plates, for I am so far from being able to pay the charge myself that I am fifty pounds in debt, so that I can do nothing in this till I have a favourable answer from your lordship, and if you should have the goodness to lend me some little sum of money to help to pay my debt, I will promise to repay it upon demand, if able, which will very much help and oblige me.

Among the Lord Treasurer's correspondents we have not seen an application containing so honourable a condition as is found in the last sentence. The independence and dignity of GIBBS are maintained by it. He is not a beggar, but an artist who seeks for temporary aid in order to produce a work which will be serviceable to his countrymen. The work was successful, and we may be confident that whatever loan he received was repaid. GIBBS was one of the architects who was nominated to design and superintend some of the new churches which were to be erected in London. We have two epistles from him to Lord OXFORD on the subject. The following are copies:—

> September 13, 1713. Whitehall.—Wednesday last was the day appointed by the Commissioners of the new churches for electing a surveyor, but the Dean of Canterbury being in the chair, it was deferred a fourteen night hence. Now since your lordship was pleased out of your goodness to recommend me by my Lord Bingley's letter, I hope you will be pleased to consider and compassionate my circumstances by not recommending anybody else. I thought indeed that the least intimation in your name by anybody besides so great a man as my Lord Bingley would have been sufficient to the Commissioners for electing the person recommended, but it seems that my antagonist has got the majority upon his side, and unless your lordship renew your goodness by a line or two from your own hand, I shall certainly lose it. These little places do not fall out every day, and I may starve before another opportunity presents itself, but your lordship, that takes a pleasure in doing good, will, I hope, consider my circumstances at present by letting me have this small thing, since it lies entirely in your breast to give it or not, as you please, and only depends upon a line from your hands; you will do a great act of charity, and I am sure oblige very much my Lord Mar and all my friends.

> I went upon Wednesday last with my Lord Bingley's letter, in your lordship's name, to the Commissioners for building of the fifty new churches, and they said they had a great respect for your recommendation, for which I acknowledge my obligations to your lordship. Only my friend Mr. Vanbrugh was against me, I suppose because I was recommended by your lordship, and got the Commissioners to defer the nomination

> of a surveyor these two months as yet, and it may be longer, which I believe may be dangerous, wherefore I have presumed to acquaint you with it, as likewise to send the enclosed letter to subscribe if your lordship thinks it proper, seeing it is only to confirm your first recommendation which was by my Lord Bingley; it will contribute, I am sure, very much to my advantage in obtaining the place of surveyor, and add a new obligation upon me.

Gibbs may not have obtained the number of commissions he anticipated, and we suppose he considered himself competent to undertake all, but one given to him for the church of St. Mary-le-Strand was happily bestowed, and when the Strand improvements are accomplished there is little doubt that the appearance of the building will be more imposing and increase his reputation.

It is evident Gibbs was not satisfied with the part taken by Vanbrugh. Another letter in the collection suggests that in a time when politicians were prepared to change sides at a moment's notice, or to hold on by all sides simultaneously, the "Mouse-trap Man" was not faithful amidst the faithless. It is not known to whom the letter was addressed, but it found its way to Lord Oxford:—

> April 2, 1713.
>
> I don't know whether you have heard that I am turned out of my place in the Works for writing a letter to the mayor of Woodstock, in which I say the Duke of Marlborough has been bitterly and barbarously persecuted for these two years past, in which I only meant the continual and daily libels and pamphlets which pelted him, but some High Church members of Parliament would needs have it I meant the House of Commons, and so have pushed the matter to my being turned out. I believe I could have prevented it if I would have made my submission to those High Church country blockheads, but that I would on no terms do. However, I would not have you concerned at it, for if the Pretender comes in I shall get more by it than they that made it their business or were employed to turn me out.—I am, &c. John Vanbrugh.

Some compensation for the duplicity is to be found in the endeavour of Vanbrugh to have the streets of London improved. He prepared a Bill on the subject, but he was advised by Bolingbroke to withdraw it. In 1711 he again brought it forward, and he wrote to Lord Oxford for his support, saying, "If my Lord Treasurer approves of it as it is, or with any additions or alterations he shall think fit to direct, I will solicit it what I can; but unless it be espoused by the Court and recommended to the Queen's servants to take some care of, I doubt the streets may remain as they are." There is a third letter from Vanbrugh in which he refers to that perennial grievance, his dealings with the Duchess of Marlborough. The Duke would hardly, we suppose, unbend himself to smile if Lord Oxford were beheaded, but in spite of the enmity the warrior showed towards the statesman the works at Blenheim, which were suspended, were resumed by his orders. One of Oxford's agents with the army in Holland therefore writes to him:—"Your lordship's generosity is much commended at camp for carrying on the building at Blenheim with so much diligence. This is heaping coals of fire on their heads."

Another architect who was connected with the fifty churches scheme was Thomas Archer. There is a letter from him relating to a proposed church in the Green Park, near Devonshire House—a suggestion which appears to have escaped the notice of all modern historians of London. The letter runs:—

> May 15, 1713.—Pursuant to your commands I enclose a draft of the ground desired by the Commissioners for the site of a church. It is a corner of the park over against Devonshire House that would be beautified by such a structure to terminate the houses, and it would put a stop to any further buildings on that side, and is not above an acre. The impossibility of finding another site in this part of the town, which though it lies near St. James's Church is in St. Martin's parish, has forced the Commissioners to apply to you to intercede with the Queen for her approval of it. Postscript.—The prejudice that Devonshire House would receive by such a building is the greatest objection. Lord Oxford has endorsed it with the statement, "Concerning a church to be built over against Devonshire House. The Queen does not approve that suggestion."

During the reign of Queen Anne the world was startled by many financial speculations, the South Sea scheme being one of them. The Harleys, for apparently the business was mainly carried on by the sons and relatives of the Lord Treasurer, entered on speculations of a safer sort. They were the creators of that highly respectable district, one long thoroughfare of which still bears their name. In a news letter of June 19, 1711, it was announced that the Duke of Newcastle had purchased the manor of Marybone of Esquire Austin for 17,000*l*., which was said to be worth 25,000*l*. His Grace does not appear to have utilised the property. Six years afterwards Lord Oxford's brother says there was a disposition among several persons to build on the ground, including Lord Dartmouth, Lord Carnarvon, Lord Harcourt, Lord Bingley, Lord Bathurst and Lord Castleton. They were prepared to build at once, but Mr. Harley, the Treasurer's brother, said it was better that the ground should be first laid out and the ground rents arranged before the buildings were commenced. Soon afterwards we hear of Lord Harcourt taking 75 feet of ground in Cavendish Square, and he lost no time in digging the foundations of his house. The west side of the square was taken by the Duke of Norfolk. The following interesting letter by Edward Harley was written in 1720, and it will be seen that the practice of removing gravel and replacing it with inferior material was not introduced by modern jerry-builders:—

> I must begin with Cavendish Square, which is my present mistress. I have been this day with Lord Carleton, who has taken 72 feet to the east side of the Duke of Chandos's gardens. Lord Shelborne is to have as much or more next to him northward, and I think we have the prospect of setting all that lies to the westward, as far as the wall of the Manor House, along the Duke of Chandos's gardens, in which Mr. Hutchinson has been very serviceable. Both Lord Bathurst and Sir William Windham have been with me to take ground, but this long area being in a manner set, we have turned our thoughts how to make the best of the east side of the ground. Prince has drawn a new plan, which with some alterations may do very well, and I hope a great part may be soon set, in order to which we think it advisable to move the church by the east corner of that ground, which we think will have the same effect as the removing the Duke of Chandos's house from the place where it was first intended, for what we are now principally to attend is the filling the east side, and I think it will be very proper that the foundations of the church be laid this year, and immediately begun.
>
> As to the market house, I have taken upon me to direct immediately the building, for some reasons I have lately met with, which you may easily guess, and which I hope will put a stop to some other projects. Mr. Hutchinson has taken a survey of all the pits that have been dug by Long for gravel and brick clay, and which by his lease he is obliged to fill, which to do will cost 10,000*l*., so that you will have him in your power to bring him to reasonable terms. I have directed that notice be given him that you intend to build upon that part of the ground which by his lease he is obliged to quit, and I hope by degrees we shall bring him to reason. Be pleased to let me have your directions in these matters, that my zeal to serve you and my lady may not lead me into any mistake.

A second letter written the same day announces that the site for the market place had been fixed, and as no time was to be lost in erecting the market house the works were to begin immediately. In 1720 owing to the abundance of money made in speculation the value of house property appears to have increased enormously, and building sites were a prudent investment. "A sorry house and no good situation" near Derby worth 330*l*. a year was sold, we are told, for 14,000*l*. For a house in Gerrard Street, Soho, a rent of 200*l*. was asked. But the financial conditions of the time were not of an enduring kind. In one letter we read of that remarkable personage the Duke of Chandos taking a large part of the square for a palace and negotiating for all the ground in Chandos Street in the rear. In another letter we learn that His Magnificence was going about endeavouring to raise a loan of 500*l*.

Lord Oxford, much as he was engrossed by politics, appears to have found relaxation mainly among his books and manuscripts. Matthew Prior, who was poet, humourist, ambassador and conspirator, informs his lordship he had spent a morning in making these two lines:—

Fame counting thy books, my dear Harley, shall tell,
No man had so many, who knew them so well.

Like all collectors he was supposed to be attempting the realisation of most wonderful projects. Old Dr. Covel, of Cambridge, who had a fine collection of medals which he had been collecting for more than half a century, wished to dispose of them to Lord HARLEY, and what he said will give a notion of the visions which it was believed the HARLEY family desired to realise :—"There is no man living who shall more than myself devoutly honour or more zealously applaud your most truly noble and glorious enterprise for outvying the Vatican and the great PTOLEMY himself, by your magnificent structures and exquisite collection of books and all other monuments of antiquities and curiosities, which may in all manner of literature advance the glory of your own nation and eternally oblige the whole learned world." The whole of the Harleian collections are now national property, for in the reign of GEORGE II. an Act was passed to authorise their purchase for the British Museum, and they form, perhaps, the best memorial of a statesman who was described as the greatest encourager of learning in his age.

PRINCIPLES OF CONSTRUCTION FOR ARCHITECTURAL STUDENTS.

By E. WYNDHAM TARN, M.A.

I. *Foundations*, *Concrete*, *Piling*.

IN forming the foundations of a building it is important to ascertain the nature of the subsoil and the resistance which it will offer to the pressure to be put upon it. Where the architect has solid rock to build upon it is only necessary to remove the top soil and level or scarp the surface of the rock before he places his walls upon it. But in the large majority of cases the subsoil is of a yielding nature, so that when it is pressed heavily upon it will sink down and be squeezed out laterally. It then becomes necessary to excavate trenches to some depth in order to get lateral resistance from the surrounding earth and to prevent the sinking down of the foundations. This lateral resistance varies greatly with the character of the soil, and also depends upon the depth of the trenches in which the concrete foundation is laid. It is found that when the soil is dry earth its resistance is nearly eight times as great as when the soil is dry fine sand, and that it is four times as much as when the soil is common sand. We must therefore make superficial areas of our foundations inversely proportional to these amounts ; thus, the area for common sand must be four times as great as for dry fine sand, and eight times as great as for dry earth.

The lateral resistance of the subsoil is also directly proportional to the depth of the trench, the earth at a depth of 10 feet offering twice the resistance of that at a depth of 5 feet, where the character of the soil is the same throughout. In the case of dry earth when the trench is 5 feet deep the safe load that we can place upon it is 3 tons per square foot, but where the soil is wet clay the safe load does not exceed 8 cwts. per square foot.

Suppose, for example, that we have a wall 18 inches thick, the height being 40 feet and the weight 1 cwt. per cubic foot ; then the load will be 60 cwts. for each linear foot of walling, and if we add 10 cwts. for the weight of each foot of roofing and 20 cwts. for two floors, we have a total of 90 cwts. pressing upon each foot length of the trench. Dividing this by 3 tons or 60 cwts. in the case of dry earth, we find that 1½ foot is the least area of foundation required for every foot length of walling, so that no footings are actually necessary, and the concrete need not be wider than the thickness of the wall. Where, however, the soil is wet clay, the least area must be 11 square feet for every linear foot of wall, or the footing must extend 4¾ feet on each side of the 18-inch wall.

In the above examples the depth of the trench is supposed to be 5 feet, but if the depth is 10 feet, then half the above area of foundations will suffice ; so that in the case of wet clay the footings need not extend more than 2½ feet on each side of the wall.

Concrete.—The object of using concrete in foundations being to distribute the load uniformly over the whole surface of the trench, it is essential that it should have a sufficient thickness to prevent it from cracking across owing to any unevenness in the soil, or from the soil being harder at some points than at others, since the resistance of this material to transverse stress is not great. No concrete foundation should therefore be less than 12 inches in thickness, and in cases of wet clay or loose sand it must be much greater, its resistance to transverse stress increasing as the square of the thickness (or depth), a mass of concrete 2 feet thick offering four times the resistance to this sort of stress that a mass 12 inches thick will offer.

Piling.—Where the soil is loose and yielding and the building to be erected thereon is very heavy, it is sometimes necessary to use piles before laying the concrete foundations, and to drive them down to a firm bottom. Piles, which are long square baulks of timber shod with iron, are generally driven until the resistance of the earth amounts to 2,000 lbs. or 3,000 lbs. per square inch of horizontal section. They are driven into the earth by means of a heavy iron ram, which is let fall from a height upon the head of the pile. The resistance in tons can be calculated by dividing the square of the ram's weight by the ram's weight added to that of the pile itself (all in tons), then multiplying by the height in feet through which the ram fell at its last stroke, and dividing by the distance in fractions of a foot through which the pile sank at that stroke. For example, let the weight of ram be 1 ton, that of the pile ¾ ton, the height which the ram fell 10 feet, and the amount the pile sank 3-100ths of a foot. Then calculating by the above rule, we find the resistance of the earth to amount to 190 tons ; and if the pile is 12 inches square, the resistance will be 3,000 lbs. per square inch, and one-fifth of this, or 600 lbs. may be taken as the utmost load per square inch that can with safety be placed upon it, provided the pile has reached a firm bottom. If, however, the pile has failed to do so, the safe load will not be more than half the above, or 300 lbs. per square inch.

A ram weighing 1 ton and falling 10 feet produces a pressure equivalent to 25 tons on the head of the pile ; if it fell 20 feet the pressure on the pile would be 36 tons, the pressure being proportional to the square root of the height.

(*To be continued.*)

TESSERÆ.

The Grotesque in Art.

A GROTESQUE face is one distorted in such a manner from that composed symmetry which is the ordinary expression of intellect and self-control as to appear to be given over to the domination of an inferior principle, and it is under the form of what is virtually a grotesque figure—that is, under a form of a combination of man and animal into one—that Plato in the "Republic" symbolises the union of the two antagonist principles of reason and passion in human nature. The grotesque in this particular point of view is akin to the picturesque, being "disturbed symmetry," or the balance of the two principles of sameness and variation, regularity and irregularity, proportion and disproportion, in the creation of form and figure by the combination of lines. Whatever may have been, as a matter of history, the origin of the introduction of the grotesque into Gothic architecture, whether that potent auxiliary of all art, mere accident, as probably was the case, or whether the design, as some say, of representing moral evil, or whether simply, as Ruskin would have it, diseased imagination, however this may be, its æsthetical justification, at any rate, or, in other words, the ground of the prominence so especially given it in good Gothic, was that the architect who employed it felt it to be in harmony, for whatever reason, with the style of architecture, the truth being, whether he understood it or not, that much in the same way as the finished elegance and repose of the sculpture enclosed within the frame of the pediment of the Greek temple expresses the harmony and repose predominating in that architecture, so does the abnormal and irregular life of the grotesque sculptures in a Gothic cathedral symbolise that wayward and restless departure from rule and symmetry which belongs to the Gothic by reason of its picturesque character.

A Seventeenth-century Amateur.

A gentleman of Yorkshire, named Francis Place, had a turn to most of the beautiful arts. He painted, designed and etched. Vertue heard that he learned the latter of Hollar, and preserved a letter that he received from Place in answer to his inquiries into that fact and about Hollar himself, of whom he relates on his own knowledge many particulars which Vertue has inserted in his life of that artist, but denies his having been instructed by him. Place was a younger son of Rowland Place, of Dinsdale, in the county of Durham, and was placed as clerk to an attorney in London, where he continued till 1665, in which year, going into a shop, the officers came to shut up the house on its having the plague in it. This occasioned his leaving London, and gave him an opportunity of quitting a profession that was contrary to his inclination, and of following the roving life he loved, and the arts for which he had talents. Ralph Thoresby, in his "Ducatus Leodiensis," often mentions Place with great encomiums, and specifies various presents that he made to his museum. He tells us too that Place discovered an earth for and a method of making porcelain, which he put in practice at the manor-house of York, of which manufacture he gave Thoresby a fine mug. From the same account we learn that Place discovered porphyry at Mountsorrel, in Leicestershire, of which he had a piece to grind colours on. This author specifies views of Tynmouth Castle and lighthouse, the cathedral of York, churches and prospects of Leeds, drawn and etched, and a mezzotinto of Henry Gyles the glass-painter, executed by Place. He also scraped three plates of John Moyser, of Beverley, his particular friend; of Thomas Comber, Dean of Durham, and of Bishop Crew. The last is finely executed. Many sketches of castles and views which he took in Wales, and of various other places in England, Scotland and Ireland, several of them well finished, are extant, and have been engraved. A view of Scarborough Castle was drawn as late as the year 1715. His prints are very scarce. He seldom resided in London, and drew only for his amusement, seldom completing what he undertook, and in his rambles painting, drawing and engraving occasionally. In the reign of Charles II. he was offered a pension of 500*l.* a year to draw the royal navy, but declined accepting it, as he could not endure confinement or dependence. In Thoresby's "Topography of Leeds" are some churches by Place. Ames mentions a print by him of Richard Thompson, from a painting of Zoust; it is boldly done. Another is of Sterne, Archbishop of York. He also did some plates of birds, and the figures for Godartius's "Book of Insects." Place died in 1728, and his widow, by whom he had a daughter, married to Wadham Wyndham, quitting the manor-house in York, disposed of his paintings, among which were an admired piece of fowls, others of flowers and fish, unfinished. There are two heads of Place extant, one by himself, the face only finished, and another by Murray.

The Greek Mythic Period.

The modern historian of Greece who would instruct us must feel and believe with us as well as with those whom he describes. We must know wherein lies the difference between us and them, that so we may be led really to understand them. In order to accomplish this, we need not only to fight in their ranks, to listen to their orators and to walk their streets, but to enter their temples—by stream and grove to exult in their hymn of praise, to glory in the ancestral line of mighty heroes and demigods, to feel ourselves surrounded on mountain and in plain, by sea and on the land, by powers invisible but felt—who dispense to us with their own hand, and at their will, sunshine and shower, every blessing and every curse. A difficulty of interpretation this, greater than it falls to the lot of the mere verbalist to overtake. The Greek brought to our bar—he examines, and translates his words to us. But if we as strangers hear, and as strangers feel, we may wonder—it may be admire—but we do not know Greek history, the history of the men of Greece, having souls within them that shaped and fashioned their outward lives. To know children we must feel like children. If "the child is father to the man," father and son should live together. The son should not be forisfamiliated, nor should he turn his father to the door when he has outgrown the feelings of his need. So have we had philosophers that expounded lofty themes to admiring men, and suddenly enchanted whole tribes of children with sweet songs, that children still feel and love. So have we educationists, entrancing youth with tales that fit and yet elevate it, as the food of infancy gives a vigour that soon requires other sustenance; and, after feeling with the young, turning to grown men, and teaching them too to feel for them as they ought, and so to do them justice. To teach us then to know the youth-time of Greece, we must have one who shall know it and feel with it, and yet know us and feel with us.

Commemorative Art.

Architecture and sculpture being both highly inventive when they go hand in hand for one object are really sister arts, and with painting make up the three graces of the visible arts. So are there many things which may seem at first view to come under ornament, which do not. Objects of commemoration, of reward and presentation of costly materials wherein sculpture is the principal, such as vases, shields, &c, where the idea of daily use must never intrude, which idea of daily use, nevertheless, is the great merit and desideratum of the manufacture, and here is the great difference between them. We are aware that the uncostly materials of the Etruscan vases may be objected against our argument; but were they very uncostly? Supposing them to have been so, they were of commemorative designs; they were in their origin historical or domestic memorials, and deposited, sacredly deposited, abstracted from all idea of private use; nor, even as they are, out of this view of their consecration (which stamps upon them a value we can scarcely divest them of), do we think the figures that encircle them are their best ornaments, and often for our own taste prefer less significant ornamental accompaniments, which would leave the impression of the beauty of the form of the object upon which they are designed more perfect. And if the shields of Achilles or Hercules, as described by Homer and Hesiod, be objected against us, we throw ourselves back upon the same argument. They are commemorative and celestial gifts, not for use, but in the poet's conception; and, indeed, where gods themselves were mingled with earthly combatants, and because the form of commemorative presentation to the Duke of Wellington happens to have been a shield, will any one say that the idea of its use, as such, at field day, or even at another Waterloo, would not degrade it from its more sacred and depository character?

Raphael's Receptivity.

A mind so receptive as that of Raphael could not but profit by every noble influence. Beginning his course at a period when Leonardo da Vinci's powers were matured and Michel Angelo had shown his mighty capabilities, Raphael became the natural heir of all that the Renaissance had achieved. Simultaneously, too, monuments of ancient art were being unearthed which brought to light, if only in copies of Roman Imperial time, the Greek ideal. Of all these advantages he availed himself freely, though with a wise restraint and with full self reliance, developing his style without apparently ever forgetting his Umbrian origin. It is in this remarkable combination that we recognise him. His influence was wide spread, but though it produced superficial imitators it can hardly be said to have created a school. His individuality was too evenly balanced, too perfectly rounded, as it were, to present any one phase so strongly defined as to suggest a new direction in the life of art. Upon him followed the era of deliberate eclecticism.

The Arco della Pace, Milan.

The Arco della Pace is one of the most splendid public embellishments of Milan, and after the Arc de l'Etoile at Paris the most important monument of the kind erected in modern times. It is the principal work of its architect, the Marchese Luigi Cagnola, by whom it was commenced in 1807, and carried on until his death, August 10, 1833, after which it was continued by Carlo Londinio, and finally completed in 1837. It stands on the north-west side of the city, where it forms the entrance from the road of the Simplon into the spacious Piazza d'Armi, and is not only completely insulated, but so situated as to be seen to the utmost advantage from every point of view. The arch, which is entirely faced with marble, and highly enriched in every part with reliefs and sculptures, besides statues both upon and in front of the attic, forms an architectectural mass whose general dimensions are 72½ feet English by 42½ in depth and 74 in height, or including the sestiga and statue on its summit, the extreme height is 98 feet. Each of the principal fronts exhibits four fluted Corinthian columns, with half-columns behind them, and between them a centre arch (24 feet wide and 48 high) and a smaller one (10 feet 9 inches wide and 28 feet high) on each side of it. The entablature (the frieze of which is enriched throughout with figures of genii holding festoons) is not made to break over each of the columns, as in the triumphal arches of antiquity, neither is it continued unbroken throughout, as is the case in the arch at the Green Park, London, but it forms only a single projecting break on each side of the centre, whereby the inconvenience is avoided of such a mass of stone being suspended over the wider centre intercolumn. This disposition of the entablature has led to another novelty in the design, for instead of a statue being placed over each column, a single recumbent one, of larger dimensions than would else be suitable, is placed on these projecting entablatures. Those on the side towards the city represent the rivers Ticino and Po, on the other the Adige and Tagliamento, the two former of which were executed by Cacciatori, and the latter by Pompeo Marchesi. There is some peculiarity in the plan of the Arco della Pace, there being no transverse passage through it from end to end, as in the Arc de l'Etoile, but merely an opening through the piers separating the larger arch from the one on each side of it, owing to which the external sides or ends of the structure have the expression of greater solidity. At each angle of the attic is a bronze equestrian statue of Victory, about 13 feet high, and on the side towards the city the centre is crowned by a colossal figure of Peace (modelled by Sangiorgio, and cast in bronze by Luigi and Antonio Manfredini) in a car with six horses.

NOTES AND COMMENTS.

A contest in which Mr. Reginald Blomfield, Mr. William Flockhart, Mr. Ernest George, Mr. Henry T. Hare, Mr. Mervyn Macartney, Mr. E. W. Mountford, Mr. Ernest Rüntz and Mr. Leonard Stokes take part should be productive of satisfactory results. They are the eight architects who have been selected to prepare designs for the elevation of the buildings to be erected in the Strand and on the crescent road between Wellington Street and Clement's Inn, forming part of the improvement undertaken by the London County Council in connection with the new thoroughfare between the Strand and Holborn. It was arranged that four competitors were to be nominated by the London County Council, and the choice fell on Mr. Jackson, R.A., Mr. Macartney, Mr. Mountford and Mr. Rüntz. As Mr. Jackson declined to act, Mr. Leonard Stokes took his place. The Royal Institute of British Architects, on the application of the County Council, nominated Mr. Blomfield, Mr. Collcutt, Mr. Ernest George and Mr. Norman Shaw, R.A. Mr. Collcutt objected to the proviso that the County Council were not to be considered under an obligation to employ any of the selected architects, and Mr. Norman Shaw said he had given up active work. Mr. William Young and Mr. Aston Webb were invited, but declined to compete, and then Mr. William Flockhart and Mr. H. T. Hare were selected. Apart from the importance of the sites which will be used, the competition will be novel, for while designs for single buildings are invited from architects, terraces and streets, as a general rule, are rarely made the subject of a design, unless in cases of large building estates where the houses are made to assume a mechanical uniformity. In the Strand buildings it is likely to be difficult to hit upon the happy mean between uniformity and variety, which the County Council will interpret as "Palladian."

It is generally recognised that the obligation to erect memorials does not extend beyond a period of, say, a thousand years. A sculptor might select a celebrity who lived before that time as a model, and at his own risk produce a statue like the *Charlemagne* which we see at Paris, or the *Geoffrey de Bouillon* in the Place Royal, Brussels, or the *Richard I.* in front of the Houses of Parliament at Westminster. But in Italy they seem disposed to take up the celebrities of a still earlier time. It is stated that a memorial of Sallust, the historian, is to be erected in Aquilla, where he was born, and which is in the country of the Sabines, near Amiternum. As he belonged to a plebeian family, and attained a high position and immense wealth, he excited envy among less successful men, and the stories told of him are therefore not pleasing reading. But with all his real and imaginary faults, he was a great patron of architecture. The palace he built in Rome was long used by the emperors. The gardens attached to it were the most beautiful in the city. His house in Pompeii was remarkable for elegance, and did not lose its value because a shop opened into the principal rooms. Probably in his conduct he was not much worse than men of like standing in Rome, but it was his misfortune to pose as a moralist, and the contrast between his doctrines and his practice was too marked to be overlooked. His historical works form, however, a more enduring memorial than can be fashioned out of marble or bronze, and they are the more remarkable because they were experimental, for before his time there were only annalists who were without skill in historical composition.

Although the annual revenue of the National Trust for Places of Historic Interest or National Beauty amounts to no more than 330*l.*, excellent work has been accomplished by that body. Whenever something has to be acquired for the public interests local aid is forthcoming. During the last year the Trust has rescued Ide Hill, Kent, containing 15 acres of woodland, at a cost of 1,636*l.* Wicken Fen, which is a hunting-ground for etymologists, has also become public property. Duffield Castle and Kanturk Castle have also been saved. It is now proposed to obtain possession of the old Court-house at Long Creden, Buckinghamshire, and the old Post office, Tintagel, but for that purpose about 550*l.* will be required. At the general meeting on Tuesday a resolution was passed expressing regret for the death of the late Duke of Westminster, who was the first president of the Trust, and whose influence and sympathy have had much to do with its success. Another resolution was passed protesting against the project for the erection of a Physical Laboratory in the Old Deer Park at Kew, for which purpose 14 acres would be abstracted from the open space.

On Tuesday Sir Robert Murdoch Smith, director of the Edinburgh Museum of Science and Art, died in that city. He had held his office since 1885, but his name was long connected with the subjects which the museum represent. When the late Sir Charles Newton went to Halicarnassus in 1857, the detachment of engineers who were to take part in the operations which have enriched England with the remains of the Mausoleum was placed under the command of Murdoch Smith. In 1860-61 he conducted the exploration of Cyrenaica. Afterwards he had charge of the difficult and dangerous duty of setting up telegraphs in Persia. His success led to his selection as the most fitting officer to have charge of the Persian telegraphs, an office he held for twenty years. During that time he studied the art of the country, and there was no more learned authority on the subject. Many of the works of art which he acquired are in the South Kensington Museum. Sir Robert Murdoch Smith was an excellent type of the Royal Engineer officer, a class whose versatility is almost unbounded and who are without rivals in any other army.

The United Kingdom continues to be the chief of the foreign patrons of the Carrara quarries. According to the latest official returns, out of 161,259 tons exported 40,089 tons, or one-fourth the entire quantity, came to this country. The United States may soon take the lead, for the quantity credited to them was 39,857 tons. Italy required 43,909 tons. The quarries extend from Carrara to Massa and Versilia. Altogether there are 1,264, but 793 of them are not worked. The men employed number 6,522 at Carrara, 1,100 at Massa, and 2,533 at Versilia. The last year's products are returned as having the value of 9,808,520 Italian lire. It is often supposed there is great loss of life at the quarries, but during 1898 there were only 40 serious casualties among the workers, by which 7 quarrymen were killed and 33 were injured, of whom 3 were permanently deformed and the remainder recovered. Slight casualties numbered 729.

A meeting of the Leicester Guardians was held on Tuesday evening, when the report of Mr. W. H. Ward, the assessor, on the competitive designs for the infirmary and pavilions was considered. It was said that generally the schemes were not up to the standard anticipated. Mr. Ward selected three schemes which, while conforming, in his opinion, more nearly to the instructions and requirements, had arranged the disposition of the buildings—(1) that they obtain a common level, (2) leave sufficient and proper space for future workhouse buildings and extension, (3) permit of the imbeciles being isolated as much as possible from the general institution. No. 5 was incomparably the best and most carefully thought-out scheme of those submitted, and it showed the most value for money. The Chairman announced the result of the assessor's selection as follows:—No. 5 (premium 100*l.*), Messrs. Giles, Gough & Trollope (London); No. 1 (premium 50*l.*), Messrs. Blackwell & Thompson (Leicester); No. 3 (premium 25*l.*), Messrs. A. Harrison & A. C. Gaunaway (Birmingham). The report was unanimously adopted. The estimated costs of the scheme, according to the selected designs, are as follows:—No. 5, 94,000*l.*; No. 1, 85,153*l.*; No. 3, 83,000*l.*

ILLUSTRATIONS.

LICHFIELD CATHEDRAL: THE CHOIR, LOOKING WEST.

SELECTED DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY:
LONGITUDINAL SECTION
PERSPECTIVE VIEW OF DESIGN BY MR. J. BELCHER, A.R.A.

HOTEL RUSSELL, RUSSELL SQUARE.

STAINED GLASS IN ENGLAND SINCE THE GOTHIC REVIVAL.

WITH SOME ACCOUNT OF THE CHURCHES REFERRED TO.

By T. FRANCIS BUMPUS,

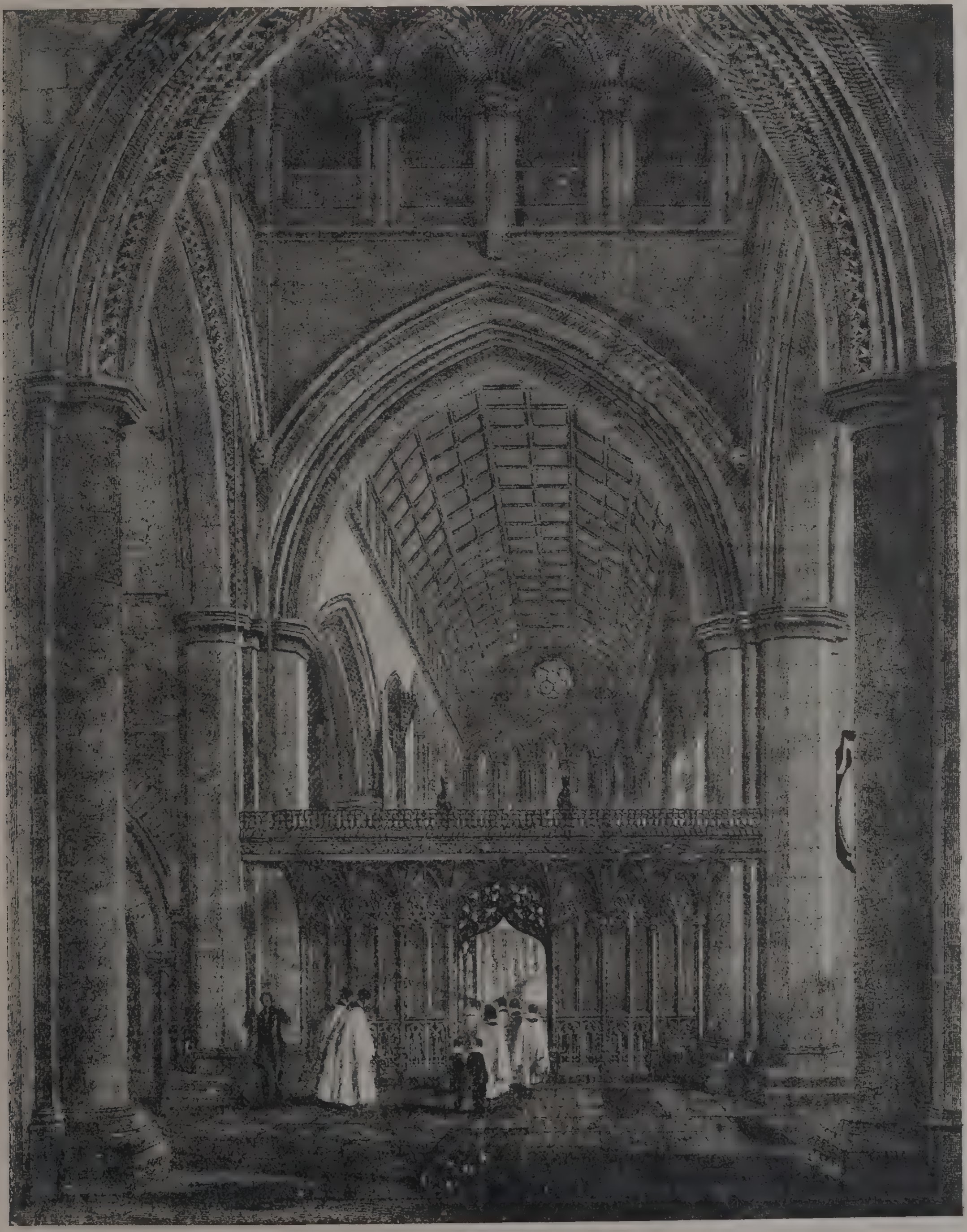
Author of "Ecclesiologia Germanica," "Summer Holidays among French Cathedrals," &c.

(*Continued from page* 387, vol. liii.)

WE may now proceed briefly to pass in review a few of the more important works executed by Hardman from the designs of Pugin for structures of the English Church, commencing with that in the choir of Jesus College Chapel, Cambridge, whose restoration, began in 1845 under Salvin, was completed four years later by Pugin. Through the means of one munificent member of the College, who at the outset took the deepest interest in the matter, the work of restoring this beautiful piece of First Pointed work was carried out with much more ritual completeness and richness than could otherwise have been the case, the arrangement of the stalls and the manner in which the organ, in its case of tryptichal form was disposed above the northern range, owing much of their excellence to the joint taste and skill of promoter and architect.

Prior to these works of restoration the east end of Jesus College Chapel was lighted by a wretched window of the feeblest Third Pointed character. Great alterations had taken place when St. Rhadegund's nunnery was suppressed, and its church converted at the close of the fifteenth century into the chapel of the college founded in lieu thereof by Bishop Alcock, the lateral chapels of the choir, the greater portion of the nave and the aisles of what remained of it being pulled down. Succeeding centuries wrought further havoc, and when the restoration of 1845 was taken in hand the building presented a conglomeration of botchings, beneath which, however, there lurked, as is often the case, sufficient remains of early details to enable their reproduction to be effected without much conjecture.

The Perpendicular east window was replaced by a triplet of graceful lancets configured after those which had survived the general wreckage of Early Pointed work on either side the sanctuary, and filled with stained-glass by Hardman, the design comprising a great number of medallions of sacred



JESUS COLLEGE CHAPEL, CAMBRIDGE. (*From an Engraving published shortly after the Restoration in* 1850.)

scenes which bear a close inspection. Perhaps the drawing is rather too archaic, though this may perhaps be attributed to the ancient work which Pugin had proposed to himself for guidance, and the general effect is a little pale and confused. The glass in these lancets is moreover somewhat killed by the deeper and less relieved tinctures of the sexfoiled circle surmounting them, but, on the whole, it may safely be pronounced among the happiest examples of the mosaic or medallion treatment produced since the Revival, while it offers a most striking contrast to some contemporary work of the same collaborateurs in another Cambridge college chapel, that of Magdalene. In the east window here glass representing a series of subjects from the life of the patron was introduced, very Late German in feeling, but as regards treatment of accessories, as *e.g.* the canopy work, far in advance of its age. The manner in which the artists represented the Magdalene clad in rich secular habits of the period evoked some rather sharp criticisms from the architectural and religious publications of the day.

Reverting to the Jesus Chapel windows,* it should be stated that both to the selection of subjects and general treatment Pugin devoted much time and thought, in the hope of imparting to them a character which should be thoroughly in harmony with their position. For this purpose he made a special journey to Chartres, and on his return, about May 1849, wrote characteristically to Sir John Sutton,† the munificent contributor to this interesting piece of collegiate chapel restoration, as follows:—"I have just returned from Chartres, where I have been for the express purpose of examining the early windows for your chapel; and I have not only got most accurate details, but actually a lot of the real glass from a glazier, and Mr. Hardman is going to match the tints exactly, so I have every expectation of producing *the real thing*. I have had my cartoons done over again, for there is a peculiar treatment about this early glass which is exceedingly difficult to attain. We shall now get on very fast, and I can assure you that every exertion shall be made to complete the three windows as speedily as possible, but *I* must be perfectly satisfied before I let them go." This not unfrequently meant, with Pugin, poking his stick or umbrella through such portions of the glass as failed to please him, an enviable distinction, and one that, so tradition goes, was enjoyed by the east window of St. Andrew's, Wells Street. Contemporary with the glass of the Hardman-Pugin fabrique at Cambridge, this glass at St. Andrew's was fixed in position by the Whitsuntide of 1850, and although the introduction of a little more neutral tincture into the groups would have been a vast improvement, yet sufficient relief is afforded by the white borders and canopy work.

St. Andrew's, Wells Street.

The window, a large composition of five lights, contains two tiers of subjects divided by a transome. Commencing in the left-hand bottom corner with the Radix Jesse, they conclude in the right-hand top light with the Pentecost. The whole, if in some respects somewhat crude as regards draughtsmanship, betrays the hand of a master in its iconology.

Some of the tinctures are of unusual beauty, particularly a ruby in the robe of St. Joseph in the compartment devoted to the Nativity, and a purple in that of the Blessed Virgin in the Flight into Egypt. Redfern, the sculptor, when employed here on the reredos, used to say that he forgot the deficiencies of drawing in this east window at St. Andrew's, Wells Street, in his delight at the superb colouration. Hardman executed other windows in this church, *i.e.* the last two on the south side of the clerestory which, with their effigies of St. George and St. Patrick, St. Alban and St. Augustine, were given by that enthusiastic ecclesiologist, Beresford Hope, both betraying a Puginic influence; but the finest glass in St. Andrew's is by Clayton & Bell, and belongs to a period which our history has not yet reached.

St. Paul's, Brighton. Doorway in Tower.

Built between 1845 and 1847 by Dr. Chandler, Rector of All Souls, St. Marylebone, and Dean of Chichester, and who, it will be remembered, sounded the note of restoration in that cathedral, St. Andrew's, Wells Street was founded with the object of providing a church in which, free and open, the rich and poor might worship Him who is the Maker of all, side by side. More remarkable, perhaps, in the evidence which it affords of the progress of ecclesiastical art in England during the last half century than as a specimen of Revived Pointed architecture, though that is by no means contemptible, the interior of St. Andrew's has, under successive incumbents, undergone many alterations, embellishments and improvements from the hand of almost every architect of eminence since the Revival.

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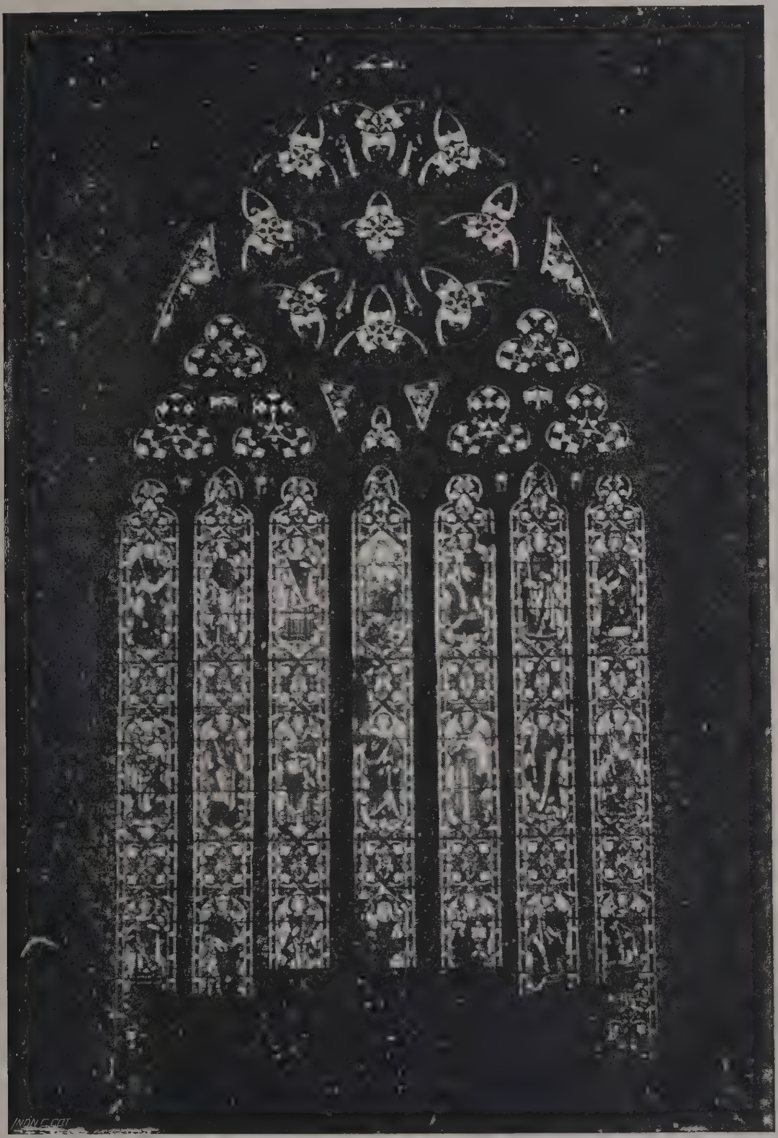
* The nave of Jesus College Chapel, containing, as it does, some of the finest specimens of Morris, Marshall & Co.'s work, the Alpha and Omega of revived glass painting may be said to meet here.

† He was an enthusiastic student and admirer of ecclesiastical architecture, and in 1847 put forth an exceedingly valuable and interesting little book, *A Short Account of Organs built in England, from the Reign of Charles II. to the Present Time.*

When first opened in January, 1847, St. Andrew's, Wells Street, was fitted up for the proper performance of Divine service with a regard for ritual propriety much in advance of its age; indeed, until the completion, three years later, of St. Barnabas, Pimlico, it was regarded quite as a model church by lovers of religious decency and order.[*]



ST. PAUL'S, BRIGHTON. GREAT EAST WINDOW.

Much had been done during the incumbency of Rev. Jas. Murray to enrich the Perpendicular architecture of the interior, designed probably on the model of St. Stephen's, Bristol, and cleverly adapted by the architect to its site, with stained-glass, &c.; but it is to the late Rev. Benjamin Webb, who became its vicar in 1862, that the present grandiose character of St. Andrew's, Wells Street, is due. In the hands of this accomplished priest—who with John Mason Neale founded that Society to which such frequent allusion has been made in these papers—St. Andrew's, to quote from an eloquent sermon preached by the Vicar of St. Pancras on the vigil of the Dedication Festival, 1887, "grew to beauty. Each difficulty seemed an opportunity; each emergency resolved itself into a chance."

Three years after his appointment Mr. Webb called in George Edmund Street for the amelioration of the chancel fittings, and to him we owe the low wrought-iron chancel screen, with its gates and ingeniously contrived pulpit of the same material, and the reredos combining reminiscences of the Spanish retabula, the parclose screens at Amiens, and by its connecting arch forming a species of inner plane of tracery to the lower part of the east window, Beverley and York.[*]

The handsome coped lectern, designed by Butterfield on the model of those put forth in that work for which he was mainly responsible, the *Instrumenta Ecclesiastica*, had been placed here under the régime of Mr. Murray (d. 1862), whose recessed altar-tomb, designed by Burges, will be noticed in the wall to the east of the southern range of galleries. Behind the effigy is a painting of the Majesty, by Smallfield, which formed an interesting item in the second Great Exhibition, and to the same artist were entrusted the cartoons in grisaille which fill the large four-light window by Lavers & Barraud—also a "Murray memorial"—adjacent. By Burges is the faldstool, and to the same skilful iconologist some of the eucharistic plate is due.

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[*] Almost ever since its consecration choral service in the cathedral style has been maintained twice daily at St. Andrew's, Wells Street, and under the direction of John Foster (1847-56), Philip Armes (1857-61), Henry Bennett (1861-63), Joseph Barnby (1863-71), and the present organist, Mr. F. A. W. Docker, has attained a world-wide celebrity.

[*] Mr. G. F. Bodley pressed for the colouration of this reredos, but in the opinion of the writer a sufficient effect of natural colour is presented by the alabaster and stone work, to which thirty years have tended to impart a mellow appearance. It is to be regretted that an unsightly white cloth should have been allowed to envelop the altar during the time the accompanying photograph of this church was taken, as St. Andrew's possesses a set of frontals second to none in elaboration and beauty of needlework.

The late Mr. Alfred Bell designed the scheme of coloured decoration on the gallery fronts, and in conjunction with Mr. Clayton carried out all the painted glass on the north and west sides of the church. To Mr. Bodley the decoration of the sacristy was entrusted, and to the late J. L. Pearson we owe the graceful font—replacing one from the designs of Pugin—and the sedilia. These last form an appropriate memorial to the zealous priest whose fine ecclesiological taste had evoked and stimulated the works briefly alluded to in this sketch of one of the most interesting churches raised in London during the early Tractarian movement. Lately the nave of the church has been entirely reseated, to the manifest improvement of the internal ensemble; and unless polychrome be applied to the arcading shafts and walls, it is difficult to know what else is to be done towards the decoration of St. Andrew's, though it is believed that the reredos requires completion above the arch of the east window.

A few years earlier than the east window of St. Andrew's, Wells Street, is the fine Jesse which, executed by Hardman from the designs of Pugin, closes the impressive, long-drawn interior of St. Paul's, Brighton, a church which, if not without its faults, is one of Richard Carpenter's largest and most important works. Between Carpenter and Pugin a strong friendship existed, and to it must be traced the excellence of so much of the stained glass placed in churches which the former had either built or restored, though Carpenter had himself a fine eye for colour—safer and more equable in some respects than that of Pugin, whom, in his passion for fourteenth-century art, he may be said to have rivalled.

Holding in its tinctures a kind of *via media* between the dusky ones of the Jesse executed by Wailes for Pugin's cathedral at Lambeth and the raw ones of the great altar window placed by the same artist about this period (1847–49) in Scoles's Jesuit church near Berkeley Square, this wall of painted glass—for such it may not improperly be called—at St. Paul's, Brighton, far eclipses the contemporary examples alluded to in every particular, thanks to the careful oversight of those under whose joint superintendence it was carried out. Its three tiers of seven standing figures, illustrating the genealogy of Our Lord—whose figure in the arms of the Blessed Virgin is placed at the top of the central light—combine, with Burne-Jones's graceful altar-piece, to form a most interestingly artistic termination to the deep, aisleless chancel—a chancel which, although 42 feet in depth, does not at all convey the idea of antiquarian elongation.

The creation of a chancel so amply dimensioned as this of St. Paul's, Brighton, was, at the period when the plans were drawn (1846), a great gain. At that time English Churchmen were not contending for the legality of the ceremonial use of incense and the carrying of lights in procession, but for the common decencies of divine worship; and when, after a year of licensed use, the church was consecrated on St. Luke's Day, 1848, the ceremonial on that occasion partook, as may be gathered from the following description in the *Parish Choir* (a useful periodical devoted to the cultivation of pure Church music), of no ordinary character.

"The day was in every respect auspicious, and the numbers who flocked to assist at the solemn ceremony were so great as to completely fill the church, which contains 1,200 persons. Admission was by ticket to all but the clergy, who gained admission by coming in their gowns and surplices. On entering by the south door, which alone was open, we found the church filled with a congregation consisting of persons of all ranks, rich and poor, kneeling together on one pavement. The clergy in surplices, to the number of forty, had already filled the stalls and benches of the choir, and the brazen gates of the stately screen were thrown open.* The Bishop [Dr. Ashurst Turner Gilbert] soon entered, followed by the Dean [Dr. Chandler], Archdeacon [Hare], his lordship's two chaplains, the Vicar of Brighton [Rev. H. M. Wagner], the clergy of St. Paul's and others. The bishop and dignitaries, with other clergy, took their places round the altar, the bishop occupying the furthest chair on the north side. Others of the clergy occupied a bench opposite the altar, placed within the septum (a movable rail). The altar was covered with a splendid pall of green velvet, embroidered in gold. Upon the altar was spread the white linen cloth, its ends extending on the north and south sides to the ground. On this were placed the basin, and two cruets of gold plate of antique pattern, the remainder of the holy vessels being laid upon the credence [formed on this occasion on the sloping sill of one of the windows]. At this moment the *coup d'œil* was magnificent; the bright sun, shedding its beams on the rich Jesse window which nearly filled the east end of the chancel, occasionally cast a rich glow on all around, while the 'dim religious light' which followed was calculated to fill the mind with holy recollection and awe."

The stained-glass in the three southern and the one northern window of the chancel at St. Paul's, Brighton, was in position when the church was consecrated. It represents in full-length effigies the Twelve Apostles, St. Paul occupying the place which should, more appropriately, have been filled by St. Matthias. The tinctures remind one of those in the series (almost identical in iconology with the St. Paul's windows) at the church built about the same time by Pugin at Coton Hall in Staffordshire, a deep olive green which occurs in the robe of certain figures being especially good. The canopy work is the least successful part of these chancel windows, but an improvement in this particular is visible in those of the nave aisles, which contain a series of Anglo-Catholic saints inserted between 1851 and 1854. To the same period may be assigned the large west window of five lights with the tracery of its circle composed of six large trefoiled sphericals containing busts of various saintly personages, while the lights have two tiers of gracefully posed and draped effigies standing against dossals of varied hue, and selected without reference to nationality. Another very graceful window is that of the Crucifixion at the east end of the south aisle, which, as do all the rest, breathes quite that old Puginic spirit which has of late, it is to be regretted, degenerated with Hardman into a mere agreeable prettiness. Perhaps the most praiseworthy feature in this glass at St. Paul's, Brighton, is its uniformity of design and its consistent iconography, subordinated as it has been to some general plan, and animated throughout by a single and comprehensive idea. This unity of design and effect in the whole building is one of those points in vitreous decoration that have, until comparatively recent years, been neglected in too many of our churches, both ancient and modern. It is pleasurable, however, nowadays to observe that when a new church is built, and where those in authority are persons of taste, a well-considered scheme for the whole of the fenestration, which may be completed by degrees as funds and opportunities offer, is drawn up, individuals desirous of presenting windows being requested to conform to such a scheme. As far as possible the glass should be harmonious in character, and if not all the work of one maker—which is of course preferable—should be controlled by a single person, who as a general rule should be the architect, he having studied the church and knowing what diminution of light the interior will bear. Too many a noble church has been ruined by the introduction into it of painted glass by a variety of makers. Until comparatively recently, and, it is to be feared, even now there are practitioners in the vitreous art who deal with a window as a window only, and seldom or never go to the church beforehand, and afterwards, perhaps, only for the sake of seeing how their own particular window looks, and, too often, how far it throws somebody else's into the shade.

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* These gates are a literal copy of some which, until the restoration of 1860-67, were in Chichester Cathedral. On the introduction of the present parclose screens, these interesting remains of Mediæval ironwork were bought by the South Kensington Museum, where they form an interesting item in the department devoted to ornamental work in that material. At St. Paul's, Brighton, the gates are pierced through a plate of brass, presenting in this more trim material a reticulation of quatrefoils pierced in one plane that is somewhat monotonous. They are also too lofty for their framing, rising nearly as high as the springing of the arched head of the central opening in the screen. A light cresting would, to some extent, relieve the horizontal head of these gates from the too great opposition into which they are brought with the arch; but, on the whole, both screen and gates must be considered highly meritorious when the period of their execution is taken into account. The former fits its position, breaks the great length of the church, and obstructs but little the view into the chancel.

To gain some idea of the effect produced by stained-glass which has been executed throughout on one uniform and properly digested plan, one has only to visit such churches as St. Mary Abbots, Kensington, St. John, Torquay, or St. Mary Magdalene, Paddington, while that in Butterfield's churches of St. Augustine, Queen's Gate, Keble College Chapel, All Hallows, Tottenham, and the strikingly original one of St. Michael, Portsmouth, if not open to objection in certain features of drawing and tincture, undoubtedly has the appearance of belonging to the building besides impressing one with the idea that the whole of its iconography has been carefully thought out and drawn up beforehand.

A few words on the architecture of this most interesting of the churches of Brighton, where, by the way, the progress made in Ecclesiastical architecture since the dawn of the Revival can be admirably studied, may prove acceptable. Although Carpenter was unfortunate in his site as far as the sides and west end of his nave were concerned, his deep flint-walled chancel with its noble east window and effective metal cresting, and his tower, whose lowest stage contains a large double door, inspired no doubt by that at Higham Ferrers,* unite in composing an extremely noble group. During the architect's lifetime the tower was only carried up to the middle of the belfry windows, and covered at that point with a saddle-back capping of temporary material.

The effect, however, of this steeple even in its unfinished state was so good that many persons of taste expressed the hope that the completed tower would take this gabled form in lieu of the spire with pinnacles growing out of its broaches, which was Carpenter's original design, and not very happy in ensemble, if one may judge from an engraving of it published in the *Ecclesiologist* for April 1846. In 1873-74, under the direction of Mr. R. H. Carpenter, the temporary gabled roof was removed, the belfry stage completed, and the whole surmounted by that picturesque octagon of lead and wood which, turreted on its oblique sides, forms so familiar an object in the various views of Brighton. The setting aside of the original spire was not therefore altogether a matter of regret, bold and original forms being needed in a seaside town to command attention and respect.

The rich transversely-gabling saddleback steeple not long since added to what must rank as the finest piece of modern Gothic work in Devonshire—St. John's, Torquay, by the late G. E. Street, R.A.—is a case in point.

THE ARCHÆOLOGY OF KINGSTON.

THE Surrey Archæological Society recently visited Kingston-upon-Thames. The parish church was selected as the meeting-place, and the visitors were received there, says the *Surrey Comet*, by the vicar and rural dean, the Rev. A. S. W. Young, M A., who briefly described the building.

The Parish Church.

Mr. A. J. Style, F.R.I.B.A., read the following paper :—

This church, dedicated to All Saints, is cruciform with a central tower. The length from east to west is 149 feet 4 inches, and the width at the transepts is 82 feet 6 inches, and of the nave and aisles 65 feet 8 inches. Of the exact date of the erection of the present church we have no certain information, but probably it was built in the latter half of the fourteenth century, in the reign of King Richard II. A church is mentioned in the Domesday Survey, and some remains of a Norman doorway were found in the north wall, and also indications of Norman work built in one of the tower piers. The chapel of St. Mary may have been part of a Saxon church, but no traces of it are to be seen now. The late Rev. H. P. Measor, formerly vicar of Kingston, wrote :—"No record survives of the building of the first church in Kingston, though we know that one existed in Saxon times. Of this ancient building not a vestige now remains; whether it received any addition after the Saxon rule ceased, whether it became ruinous, whether the old church was too small to accommodate an increasing population and was pulled down to make way for a larger structure, or whether it perished from accident or violence we know not. Who were the builders of the present church no history informs us, or at what time it was built. I think there can be little doubt that the church was commenced and the greater part of it built towards the close of the fourteenth century, about 1370 or 1380. The chancel and the upper part of the tower were added a few years later when the Perpendicular style had succeeded to the Decorated. The whole of the church was originally faced with flints. The only good parts of the church at present are the fine chancels, which have not suffered much from mutilation. The north chancel is of later date and poorer construction. Windows filled with decorative tracery of various designs, but much mutilated, are said to have existed in the nave previously to the last general alteration in 1739." At the time the late Mr. Measor wrote, said Mr. Style, we must remember that nearly the whole of the nave and aisle walls had been faced with brickwork, and the aisle windows had semicircular heads, whilst the ends of the transepts were of a debased Classic design of the time of King George II. Before Mr. Measor's death much was done to improve this, and during the time the present vicar has been here the nave and aisles with the two transepts have been carefully repaired, and restored under the able direction of the late Mr. Pearson, according to the original design so far as that could be ascertained. The late Major Heales, whose excellent notes on the church are published in the Society's collections, considered that the base of the tower and the north side of the main chancel were the oldest parts of the present fabric, and pointed out the piscina on the north-east pier of the tower (near the door to the belfry staircase) as being of the Early Decorated period. The rest of the church was built during the time when the Perpendicular style was in use. The nave piers are octagonal with moulded capitals. Those on the south side of the chancel are clustered and of lighter design. On the respond of the arch to the south chancel from the transept you will see the remains of a wall-painting probably of the fifteenth century, which most probably is a figure of St. Blaise, who was the patron saint of the Woollen Drapers' Company, formerly incorporated in Kingston. The chancel has two side chapels. That on the south (which is now screened off for repairs) is of the same length, but narrower than the main chancel, and is divided from it by three arches. This is probably the chapel of St. James, and that on the north is most likely that of the Holy Trinity. The piscina remains in this chapel, which is of later date and shorter than the rest of the chancel, and a low vestry has been added further eastward. The reason for concluding that the north chapel is that of the Holy Trinity is that Clement Mylam, who died in 1496, directed in his will that his body should be buried in the Trinity chancel on the north side of the church by the wall, and the recessed tomb under the window in the north wall of this chapel is probably his burial-place, although there is no inscription on it now. In 1459 William Skerne, of Kingston, obtained license to found a chantry at the altar of St. James, and desired to be buried near his uncle, Robert Skerne, whose tombstone, with the fine brasses, which is now against the east respond of the south-east pier of the tower, was at the east end of the south chancel at the time when Manning and Bray's history was written ; so that there can be little doubt that this was the chapel of St. James. This chapel, or the recess on the south side of it, became the usual burial-place for the vicars and their relatives. I may mention that Down Hall, which is near the Thames by the railway bridge, formerly belonged to the family of Skerne. There was also a chapel of St. Katherine in the church, and Major Heales considered that it was probably in the north transept where the old piscina remains. The finest brasses are those of Robert Skerne and his wife, which have an inscription in raised letters, and turned the reverse way to the usual position. There is also a brass against the north-west pier of the tower to John Hertcombe and his wife, of 1488, which is a good example of a lady's head dress of the period. There are several later monuments of interest, but most of them are in the south chancel, now boarded up for protection during the repairs. The church has suffered by fire and tempest, for in 1445 the belfry was burnt in a fire caused by lightning, and in 1703 the tower was again much injured by a storm, and the spire which was of wood covered with lead had to be taken down as well as the upper part of the tower. It was rebuilt in brickwork five years later, in 1708, as you see it now. It is very solid, and there is a good view from the top, which is perhaps the best to be said of it. Formerly all the arches at the base of the tower were low like those into the transepts, separating the nave too much from the chancel for modern services. The east and west arches have been raised. Mr. Pearson proposed to raise them all, but found the piers were not sufficiently solid to be disturbed further. The vaulting below the tower was not ancient. Adjoining the present church and opening from it (probably on the south side of the chancel aisle) stood the far more ancient chapel of St. Mary, which may have been the original Saxon church, but of which no traces now remain. It was destroyed in 1730, after part of the walls and roof had fallen, killing the sexton who was digging a grave too close to the foundations. If this was the original church, and possibly the place where the Saxon kings were crowned, the neglect which suffered it to get into bad repair, and subsequently its complete destruction, was a deplorable loss to the antiquities of the town. There was a porch, as the churchwardens paid for taking it down in 1530, but its position is not stated in the record. The prior and canons of Merton were patrons of the living and owners of property in that part of the town called Canbury.

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* The medallions in the tympanum of this doorway illustrate the history of St. Paul, whose niched effigy should certainly have been represented as Ostiarius, guarding the portal of his own church.

The Rev. A. W. S. Young, the vicar, kindly exhibited the register books to the members of the Society, including one dating from 1542, which has been lately returned to the vicar and churchwardens. The old register books are all carefully bound, and contain many entries of great interest.

Leaving the church, the party were led by Dr. Finny to the excavations in Old Bridge Street, at the site of the old Rose and Crown, and afterwards to the Market Place, where by permission of Messrs. Chilcott the interesting staircase belonging to the old Castle Inn was viewed. Afterwards a visit was paid to the coronation stone and to the Technical Institute, where Alderman Gould's collection of antiquities created considerable discussion. The party, then numbering between sixty and seventy, next returned to the Market Place, and were received in the Town Hall by the ex-mayor, Dr. Finny. The chair being taken by Mr. Ralph Nevill, F.S.A., he called upon the ex-Mayor to open the proceedings, which he did by describing the Town Hall, the maces, official chains, charters, pictures, and the heraldry of the stained-glass windows, following which Mr. E. F. Augustus Spratt read the following paper on the staircase seen in Mr. Chilcott's house.

Archæologists and Staircases.

Mr. Spratt said:—We who are endeavouring to make a special study of the science which treats of antiquity, and especially of ruined buildings, are not as a rule interested in what are commonly known as staircases, but a latitude may with your kind permission be observed on this occasion. He took this opportunity of calling the attention of their Society's Council to a suggestion he had made, namely, that when the Society, after visiting Surrey towns and villages, are satisfied that interesting, genuine and valuable "relics" exist, and are worthy of preservation, the Society might call the attention of Corporations or District Councils to such antiquities, in order not only to gain proper and adequate publicity to the "facts," but to endeavour to persuade such Corporations, Councils or their friends and ask them to raise sufficient funds to prevent such "local antiquities" as suggested being removed from the particular district of Surrey in which they are found, except of course smaller "items" or specimens which it is always advisable to send to our valuable head-quarters and museum at Guildford. If it should be objected that such bodies have not any funds at their disposal, he submitted they should and could have a reasonable amount, providing that they only go the right way to work to obtain such powers from the Local Government Board or by Act of Parliament if absolutely necessary—a passing hint to some of our county members of Parliament who seldom rise from the golden realms of sweet silence. The premises known as No. 5 Market Square, Kingston, for very many years the Castle Inn, but now used by Messrs. Chilcott Brothers, as tailors, have been purchased by Messrs. Hide & Co., of Kingston, and may probably be preserved and thoroughly restored to their proper condition. The house undoubtedly contains what may be termed a specimen staircase of the Late Elizabethan or Early Jacobean work. It is broad, well-proportioned, massive and certainly most interesting, and said by some writers to much resemble that in the former palace of the Howards at the Charterhouse, though far richer in its details. This is entirely a mistake, for I have here a photo of the Charterhouse staircase, which when compared with the Kingston, will be found a totally different design in every respect. There does not appear ever to have been any wood dado up this staircase on the wall side. Nor have we any mouldings on the architrave around the doors *en suite* with the staircase. The carved panels forming column balustrading are different designs, and made to represent grotesque figures of beasts, birds, &c., and of children riding outside Bacchanalian casks or tuns. From this and from the frequent recurrence of the initials S.B., C.B. and F.B., it is conjectured the above figure is a "rebus." Several examples are known to exist; thus a "bob" and a "tun" at Bolton. A beacon fixed in a tun represents Barkyngton, Bishop of Bath and Wells in the fifteenth century. In England during the Renaissance period, sixteenth and seventeenth centuries, staircases were almost invariably made of wood, no attempt being made to imitate those charming stone-arched and vaulted staircases of Italy or of France such as abound in Genoa and the châteaux by the Loire. But England is as much distinguished for her fine oak staircases as she is for her fine plaster ceilings. The balustrade was usually formed of extraordinary thick balusters, but very often of fretwork carved, a good example of which may be seen at Benthall Hall, in Shropshire. It is very true there is no suitable type of staircase up to the time of Elizabeth for modern purposes; but that is easily explained by the fact that houses were then seldom built to contain reception-rooms on the upper floor. For grander interior conception of the staircase our own Elizabethan, Tudor and Jacobean mansions offer the best types after those of the Italian palazzi. Every archæological student knows or should not miss seeing the grand staircase at Hatfield, also at Crewe and other houses where boldness and pictorial effects of the most charming kind are produced. In the Maison Hydraulique, at Antwerp, there is a large old oak staircase with fretwork and carved panelled balustrading, dated 1670-1700, having a very strong resemblance to ours at Kingston. It is unfortunate that our staircase in its entirety has not been carefully and properly preserved, so that the beautiful "tint" only obtained by age could be shown you to-day. The lecturer pointed out that the woodwork had been painted several times, grained to imitate "old oak," and many times varnished; consequently a doubt will naturally arise, viz.—Is the staircase built of English oak, or is it partly oak with some other hard wood used in the balustrading? Or had the oak by age become so unsightly with large fissures, cracks, &c., that bygone landlords of this hostelry stopped all crevices with putty, and perhaps from their point of view when painted and grained by the local artist was far handsomer than before, certainly easier cleaned.

At the conclusion of Mr. Spratt's paper there was an interval for refreshments, after which the Chairman called upon the ex-Mayor to describe the excavations in Old Bridge Street. Dr. Finny said that, as they had seen, they were in a line with the site of the Old Bridge, the earliest reference to which occurred in the seventh year of the reign of Henry III. (1223), and the year following the king gave the sheriff seizen of the bridge, the house belonging to the bridge, and the muniments and charters of the same. It is probable that these excavations were the remains of this house, which would have been strongly built to protect the bridge entrance to the town; probably Kingston was then a walled town, because we know there was a "Town Ditch," and in London and elsewhere the town ditch was a kind of moat which surrounded the town walls. We know there was a castle, and from its position it would have guarded the entrance to the town from London. The excavations are probably the cellars which were never much used, probably because of the frequent flooding from the river. Other remains of similar, but not such good work, were found below what is now the London and County Bank in the Market Place; in this case also the walls were of cut chalk, which is of a harder nature than the chalk from the Ewell and Epsom districts, but may have come from Godstone or below Dorking. It is also stated that there is similar work below Warwick Lodge and other houses in Eden Street; possibly the formation of a weir at Teddington may have raised the river and made the cellars untenable.

Kingston Place Names.

Dr. Finny then read a paper on this subject. He said the origin of the names of places in and around this borough is in some cases obscure, but study of them reveals many interesting details of the history of our town. The name Kingston-upon-Thames in these days of hurry is generally written Kingston-on-Thames, which is technically incorrect. The Telegraph Department of the General Post Office record the name as Kingston-on-Thames. I have been charged a penny extra for spelling the name correctly. The origin of the name Kingston is open to discussion, some deriving it from Kingstun (Anglo-Saxon tun, an enclosure) which is not to be confused with punning heraldry of the sixteenth century, in which Kingston is represented by a K and a tun; others derive the name from Kingstone (Anglo-Saxon stan, a stone) from the coronation-stone now preserved in the Market Place, and upon which seven of the Anglo-Saxon kings were crowned. The termination "ton" is the most common of all among English place names, the primary meaning being (tains) a branch of a tree; the place surrounded by a hedge or palisade becoming the tain, tun, or ton. This at first meant a solitary homestead, and remains so in Kent in the names Shottington, Wingleton, Appleton and also in Scotland, where in places the farmhouse is called a toun. The residence then of the Anglo-Saxon surrounded by the ton or palisade, an enclosure for cattle, had beyond it again an enclosure for gathered crops called the barton, which often, in addition to the barns, included mills and fishing weirs, and had beyond that again outlying cotes (mud huts) for sheep and swine, and the serfs who had charge of them, the Hog-wards (Howards) and Sheep-Ward (Shepherd), Wood-wards, those family names which remain with us to-day. In parts of England to-day the rickyard is still called the barton, the enclosure for the "bear" or produce of the soil, and around Kingston we have the names (North Barton), Norbiton, (South Barton) Surbiton, (West Barton, or West Bittoms) West-by-Thames, and (The Barton) The Bittoms. The latter of these is near the supposed site of the ancient palace, castle or residence of Saxon kings. There are sixty English villages or towns bearing the name Barton or Burton, all of which were originally rick-yards, or enclosures of the kind. But the name ton or barton soon became extended to collections of houses, villages and towns, and is often the only remaining indication of the original Saxon colonisation, and shows that then as now the Anglo-Saxon liked the domestic privacy of his own home. And this is further indicated by the fact that the large majority of suffixes to English names denote enclosures of some kind. But all towns whose names end in "ton" are not derived from tuns or enclosures, but receive their names from memorial or other stones, and in these cases the name is derived from the Anglo-Saxon "stan," a stone, or old German "stain," a stone; of these towns such as Haroldston, Buckston, Lambston and Kingston Lisle, near Lambourne, in Berkshire, indicate memorial-stones erected over the grave, or to the memory of a departed hero. At Kingston the ancient coronation stan or stone is preserved, and the Rev. Isaac Taylor, in his book on "Words and Places," derives the name of the town from it, and points out that Drontheim was the ancient "throne home" of the kings of Norway. It is certain that the terminations "ston" and "ton" are often interchanged. Brigges-stan has become Brixton, and Brihtelmes-stan has changed to Brighthampton, now Brighton. Manning and Bray, and Brayley and Walford, in their histories of Surrey, derive the name of Kingston from its having been a royal tun previous to the Saxon coronations taking place in the town, and point out that in the council held in Kingston in 838, if the records are authentic, Kingston is even then spoken of as "in loco famoso vocato Kyning estun"—that is, that it was a famous Kings-tun more than sixty years before the first known coronation. The names Dunstan, *i.e.* Mountain Stone, and Athelstan, *i.e.* Noble Stone, may be mentioned in this connection. Other local names give interesting details. Between the church and the river is a narrow street known as Bishop's Hall Street. It derives its name from a former residence of the Bishop of Winchester, as Leyland tells us. The Danes having destroyed Winchester, the Bishop made Kingston his cathedral, from which it has been claimed that Kingston is a city. The name Bishop's Hall is derived from the Anglo-Saxon hall, a stone-house, as distinguished from the cotes or mud-houses of which the plural is coton. The name hall survives in Kensal, Walsall, Coggeshall, and probably, too, in Gigg's Hill, a portion of Eden Street, where there never was a hill. Eden Street, too, as is well known, was formerly Heathen Street, that is, the Jews' quarter of the town. Warwick Lodge is said to mark the site of Warwick Castle. Latchmere Lane, Latchmere brook, and houses of the same name indicate the site of a Saxon slaughter or battle-field, being Lychmere, the moor or marsh of corpses. Lychmere, in Dorset, marks the battle-field where one of the Saxon kings won his victory and united the kingdom of Wessex. The lych gate of a church is the gate where the corpse is received; Lichfield has a similar origin. There are two bridges in the town—one was a wooden bridge, the other known as Clattern Bridge, or the stone bridge; the name Clattern has been derived from the custom which once prevailed in this town of ducking the talkative or clattering women from it, in a cucking-stool which was kept for the purpose under the Town Hall. But this may possibly be a corruption of a much earlier name, a Celtic name, Clougheen, meaning a stone bridge; there is a Clougheen in Ireland, and in Claughton, in Yorkshire, the cloch, meaning stone, still survives. Celtic names of towns are comparatively rare, but nearly every river and stream in England bears a Celtic name; our river Thames is Tem-ese or "broad water," indicating that which geologists also tell us that the stream formerly was much wider and shallower than now. The word "ese" or "esk" in Thames survives in many river names, and in the word whiskey, which is a corruption of Uisge-boy, yellow water. Canbury Ward reminds us that before the Reformation the monks of Merton had control of the parish church for about 300 years. Weston Park, now a mere passage, derives its name from the public whetstone, formerly written "we stone"; Souter's, formerly Sobterey's Row, where Shoemaker's Row, now pulled down, indicated the quarters of the shoemakers who were formerly incorporated as "The Cordwainers' Company of Kingston-upon-Thames." The old "Mercers' Mill" may have belonged to the Mercers' Company of Kingston, and the family name of Mercer in Kingston may have the same origin. Bridewell Alley, which was formerly near Orchard Street, marks the site of St. Bridget's Well, and "Cut Throat Alley" was probably, as in other towns, originally cut through El way, or "other way." Near Kingston the name of Coombe is the Anglo-Saxon combe, meaning a bowl shaped hill top; in Welsh the word appears as cwm, and beyond it the Beverley Brook indicates that there was once beavers there. But to return to the town, Wood Street indicates the site of the old wooden houses which have almost disappeared from the town, Old Bridge Street, the way to the old bridge, and Alfred Road perpetuated the name of Mr. Alfred Nuthall, J.P. Lord Liverpool, who was high steward of the borough, and laid the foundation-stone of the bridge, gave his name to Liverpool Road, and Clarence Street indicates by whom the bridge was opened. The Town Hall was formerly called the Guild Hall, being the meeting-place of the incorporated guilds of the town, and the place at which the guilds or taxes were paid.

In expressing the thanks of the Society for these papers, Mr. Ralph Nevill said that he thought Clattern Bridge derived its name from "clappers"; on Dartmoor and elsewhere clapper stones were stepping stones. Votes of thanks were then passed to the Mayor for lending the Town Hall, and to the ex-Mayor and Mr. Style and Mr. Spratt, and the party left to visit the Grammar School, where by permission of Mr. Inchbald, Lovekyn's Chantry was visited, and Mr. Ralph Nevill briefly described its history and structure.

SHEFFIELD SOCIETY OF ARCHITECTS AT YORK.

In response to an invitation the architects and surveyors of Sheffield were on Saturday last enabled to meet their professional colleagues at York. The visitors were joined on arrival by members of the council of the local society, who conducted them to the gardens of the Yorkshire Philosophical Society. The church of the Holy Trinity, Micklegate, was seen, and some of the features of the original Priory church were outlined. A view of the fine old mansion by Carr, known as Micklegate House, was obtained in passing; also the stained-glass in the churches of St. John and All Saints, North Street. Prior to lunch, which was served at the Clarence Hotel, an opportunity was afforded for sketching in the Museum Grounds the remains of St. Leonard's Hospital, St. Mary's Abbey and the multangular tower which marks one of the angles of the Roman Wall. The chief feature of the day's programme was an inspection of the Minster. The visitors were there met by Mr. Green, the clerk of the works, and under his guidance ascended the scaffolding surrounding the north-western tower and saw the restoration work now being carried out by Mr. G. F. Bodley, R.A. Bootham Bar was next visited, and, after viewing the Guildhall, St. William's College and the exterior of the Treasurer's House, the party were entertained to tea at the Clarence Hotel.

THE COVENANTER'S HOUSE, QUEENSFERRY.

A CORRESPONDENT of the *Scotsman* writes:—The insatiable demands of a utilitarian age have been responsible for the removal of not a few well-known Scottish historical landmarks. One of these, that of the old Covenanter's House, South Queensferry, is in danger of being swept away, unless some of our antiquarian societies see fit to take the matter in hand and make an effort to secure and preserve the structure as one of our most interesting national relics. For some time the building has been somewhat of an eyesore, and in consequence of its ruinous and dilapidated condition the local authority of the burgh have presented to the Sheriff at Linlithgow a petition under the Burgh Police Act of 1892 for warrant to dispose of the building by public roup. The house, which is also known as Queen Margaret's Palace, is situated near the Binks, or Rock, where Margaret, the queen of Malcolm Canmore, was wont to land when crossing to Edinburgh from Dunfermline. This quaint old building stands in the west end of the town of Queensferry, and behind the ancient Carmelite Priory. Although it bears upon it the date of 1613, it is well established that long anterior to that date it was known as "The Palace." It is close to the point of landing of Edgar Atheling with his mother and his sisters, the sainted Margaret of Scottish history, and Christina, who afterwards became a nun. That the landing took place here is abundantly proved from ancient charters, and the designation of the town at an early period as "Portum Reginæ." So it is named in a charter dated in 1164, by which the great-grandson of St. Margaret, Malcolm IV., grants to the monks of Scone a free passage "ad portum reginæ." It is further borne out by the burgh arms, which bear the effigy of St. Margaret bearing a cross, and in the act of landing from a very primitive boat. The queen's journeys between the royal palace of Dunfermline and the "Castrum Puellarum," or castle of Edinburgh, were very frequent, and this spot had been chosen as her landing and resting-place on her way. So frequent were her visits that the burgh became known, as shown by the burgh seal, as "Burgi Pasagi Reginæ," and latterly as Queensferry. To accommodate Her Majesty upon those frequent journeys a palace was built, and consistent tradition points to this venerable relic of the past as the veritable residence of the Saintly Margaret, and it should be an object of veneration to every intelligent Scotsman and a place of pilgrimage to thousands, equally with her oratory at Dunfermline and her chapel in the castle of Edinburgh. It may be mentioned that there is still an ancient and curious custom which by tradition is connected with the visits of the queen to the burgh—the procession of the Barryman. The building was the scene of another matter of deep historic interest, for here the celebrated "Queensferry Paper" was discovered. During the bloody times of the Covenant, the building had been converted into an inn, and upon a summer evening in the year 1680 two well-known Covenanters, John Hall, of Haughhead, and the Rev. Donald Cargill, had taken refuge in it. Information had been conveyed to the governor of Blackness Castle of their being in the house, and, giving orders for a body of troops to be sent on, he hastened to the place. Upon the plea of asking them to join him in a glass of wine he got into conversation with the Covenanters, but becoming impatient of delay in the arrival of the soldiers, the governor suddenly seized Hall and Cargill and called upon all in the house to assist him in the king's name. The only person to respond was a waiter named Thomas George, who struck Hall a deadly blow with a carbine. The women of Queensferry rose en masse and rescued the Covenanters, who were, however, afterwards captured by Dalziel of Binns and his troopers. Hall died on the way to Edinburgh from the effects of the blow he had received from the waiter, George, and in his pocket was found the "Queensferry Paper," or, as it was called by the Privy Council of Scotland, "The Fanatics' Covenant" It contained a resolution to "free the church from the tyranny and corruption of prelacy on the one hand, and corruption of Erastianism on the other," and this celebrated document was ultimately prefixed to the Solemn League and Covenant. It is hoped that, either through private munificence or by the formation of a syndicate of gentlemen, this ancient landmark in our history will be rescued from possible destruction and be placed under due care with a view to its preservation. Much of the interesting portion of the old building still remains, particularly the spiral staircase up which the Covenanters went and the room in which they were attacked by the dragoons.

GENERAL.

Mr. Walter Crane has designed a tablet which is to be affixed to 117 Cheyne Walk, Chelsea, which was occupied by J. M. W. Turner, R A, in his last days. It will be executed in lead.

The Wallace Collection at Hertford House, W., is to be open to the public free on Mondays between two and six; Wednesdays, Thursdays and Saturdays between ten and six; Sundays between two and six, or two and five, according to the season (commencing July 8, and continuing up to the last Sunday in October, inclusive). Tuesdays and Fridays the admission is between the hours of eleven and five on payment of 6*d*., the hours of closing being liable to modification as the season changes.

Sir Thomas Farrell, the president of the Royal Hibernian Academy since 1893, died on Monday last. He was born in 1829, and, like his father, was a sculptor. Among his works in Dublin are the statues of William Smith O'Brien, Lord Ardilaun, Sir John Gray, with the bas-relief on the Wellington memorial in the Phœnix Park, representing the last charge at the Battle of Waterloo.

Mr. G. Workman Dickson, C.E., died on board the *Orinoco* at sea. He was well known as an engineer both at home and in the colonies, where the last twenty years of his life were spent. The last appointment he held was colonial engineer of British Guiana.

The Admiralty have taken the work of the construction of the new powder magazines at Chatham from the contractor, owing to the slow progress made. He has also incurred penalties to the amount of over 3,000*l*. by his inability to employ sufficient men and to deliver an adequate quantity of material.

Mr. D. G. Hogarth, M.A., director of the British School at Athens, has been re-elected to an ordinary fellowship at Magdalen College, Oxford, with a view to his being able to pursue archæological research, more especially in the Eastern Mediterranean and Asia Minor. At present Mr. Hogarth is engaged in archæological excavations in Crete, where he has been working with Mr. Arthur Evans.

The Commission for the memorial to the late Duke of Westminster, which is to take the shape of a portrait, has been given to Mr. William Carter.

The Total Receipts for the Artists' War Fund exhibition and sales of works of art were 10,593*l*. 11*s* 9*d*.

The Principal Surveyor of Her Majesty's Board of Works has been instructed by the First Commissioner to confer with the local vestry in order to decide upon the most efficacious means of isolating the National Gallery.

An Exhibition at University College of the numerous antiquities discovered by Professor Flinders Petrie during his work in Egypt on behalf of the Egypt Exploration Fund was opened on Tuesday last.

The London County Council's Central School of Arts and Crafts hold their fourth annual exhibition of students' work on Monday next and during the remainder of the week.

M. Paul Trouillebert, the once well-known French artist, died last week. He began as an amateur, but very shortly adopted painting as a profession.

M. Debrie, the expert appointed by the magistrate to investigate the causes of the collapse of the concrete footbridge leading to one of the supplementary buildings of the Paris Exhibition, has reported that the catastrophe was owing to defective construction. The case therefore assumes a new aspect.

The Memorial to the late Mr. Richard Benyon in St. Paul's Cathedral was unveiled last Saturday. It consists of some rich mosaic work in the easternmost bay of the north choir aisle, representing the preparation of the corn and vine for the Sacrament, the design being executed by Sir W. Richmond, R.A.

The Coventry City Council have decided to ask the consent of the Local Government Board to create and issue stock to the amount of 250,000*l*. for sewage disposal, gas and electric lighting purposes.

The Annual Excursion of the Northern Architectural Association will be held to-morrow (July 7), when Spennithorne, Jervaulx and Middleham will be visited.

The Following Meetings of the Institute of Sanitary Engineers will be held on Wednesday, July 11:—General purposes and finance committee at 3 30 P.M.; election committee at 5 P.M.

We Regret to hear of the death of Mr. James Coldwell, surveyor to the Durham Corporation, which occurred at his residence on the 22nd ult. He was in his fifty-sixth year.

It is not generally known that the much talked-of Indian pavilion at the Paris Exhibition, the designs for which were prepared by Mr. Charles Clowes, 2 Arundel Street, Strand, was for a long time in jeopardy because the French executive did not contemplate erecting anything more than light kiosks in the Trocadéro Gardens. Eventually it was decided that the magnificence of the structure with its characteristically Oriental appearance, so beautifully and lavishly decorated within and without, in exact imitation of the best Indian examples, should form one of the attractions, and it is certainly one of the most striking features of the exhibition.

Lord Rayleigh has opened the new physical laboratory at Owens College, Manchester, which has been erected at a cost of 33,000*l*., including its equipment, under the personal supervision of Dr. Schuster, professor of physics. The new building covers a space of 100 feet by 60 feet, and contains forty rooms. The appliances provided for teaching, for experiment and for research in the various branches of science which come under the general head of physics are on a scale of completeness which led the principal of the College, Mr. A. Hopkinson, to speak of the laboratory as probably taking the premier place among institutions of its kind.

The Dedication of the tower of St. John's Church and a peal of bells was performed on the 28th ult. The tower alone cost about 2,500*l*. The church-room, which has been built at a cost of about 1,000*l*., exclusive of the site, was also dedicated. Both were designed by Mr. E. Perrott, architect, the contractor being Mr. Evan Jones.

A Bill promoted by the Postmaster-General to acquire lands and buildings for post-office purposes in London, Sheffield, Bristol, Ilford and Southampton, came before a hybrid committee of the House of Commons, presided over by Mr. Hanbury. There was no opposition, but provisions were inserted to keep open certain passages in the City and to meet the requirements of the South-Western Railway Company.

At the annual meeting of the Cumberland and Westmorland Antiquarian and Archæological Society, Mr. W. G. Collingwood, the biographer of Ruskin and the editor of the Society's "Transactions," called attention to the discovery which had just been made of a tumulus of the Round Bronze Age of burial at Glassonby, in the Eden Valley, where two or three years ago a British cemetery was found, containing an urn with burnt bones and other interesting objects. The tumulus had been investigated, and found to contain a circle of stones and a cist of red sandstone, in which there must have been a person buried in the ordinary way, with his knees up to his chin, and not burnt. Outside the circle there was found an urn with burnt bones, very beautifully preserved, and also a deposit of burnt bones without an urn; and just inside the circle was a bead of very beautiful light blue glass, which may have been dropped where it was found at some remote period, and which must have come from the East in times before Christ by overland traffic. The circle and cist are now fully exposed, and Mr. Collingwood said they would be allowed to remain *in situ*.

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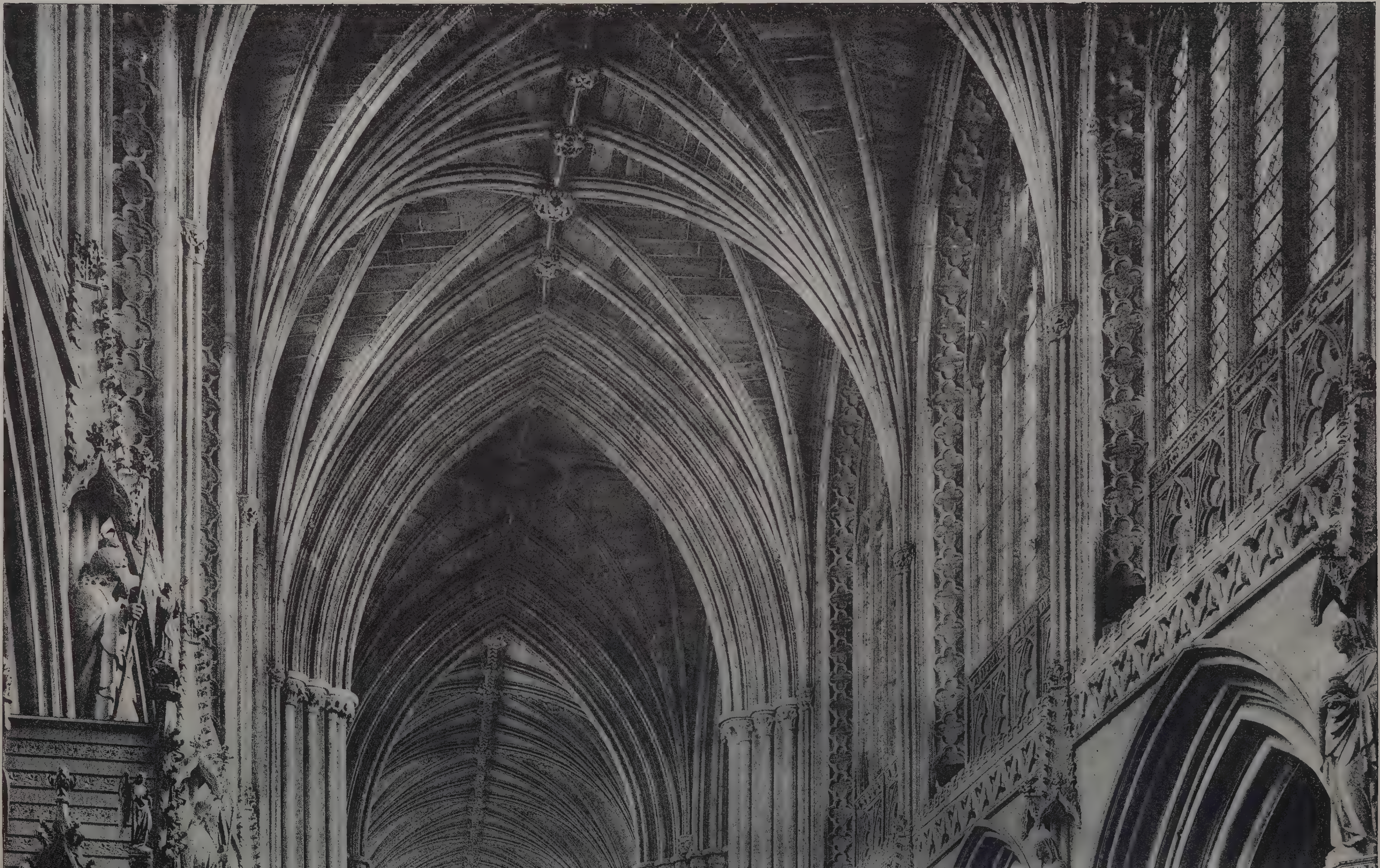

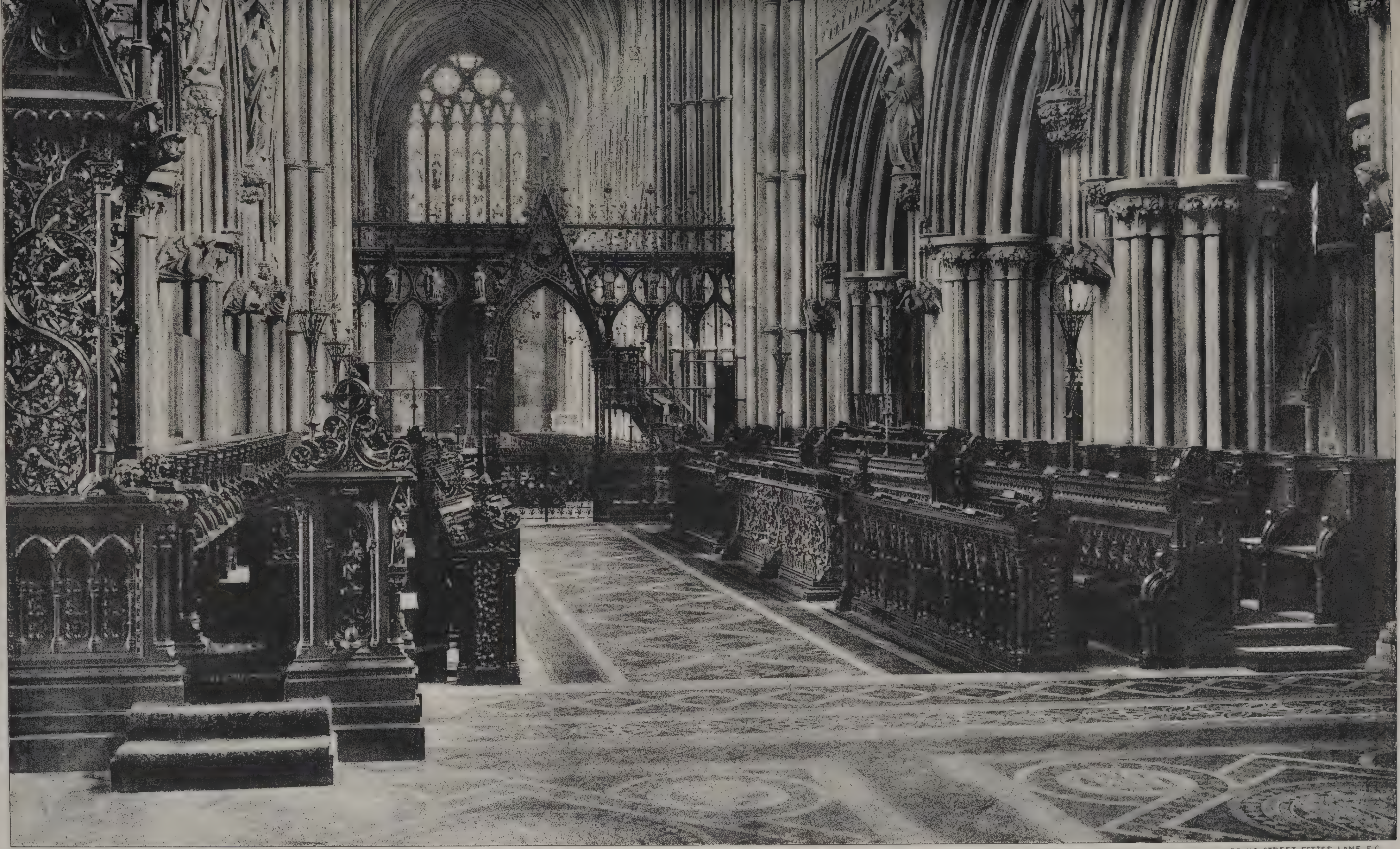

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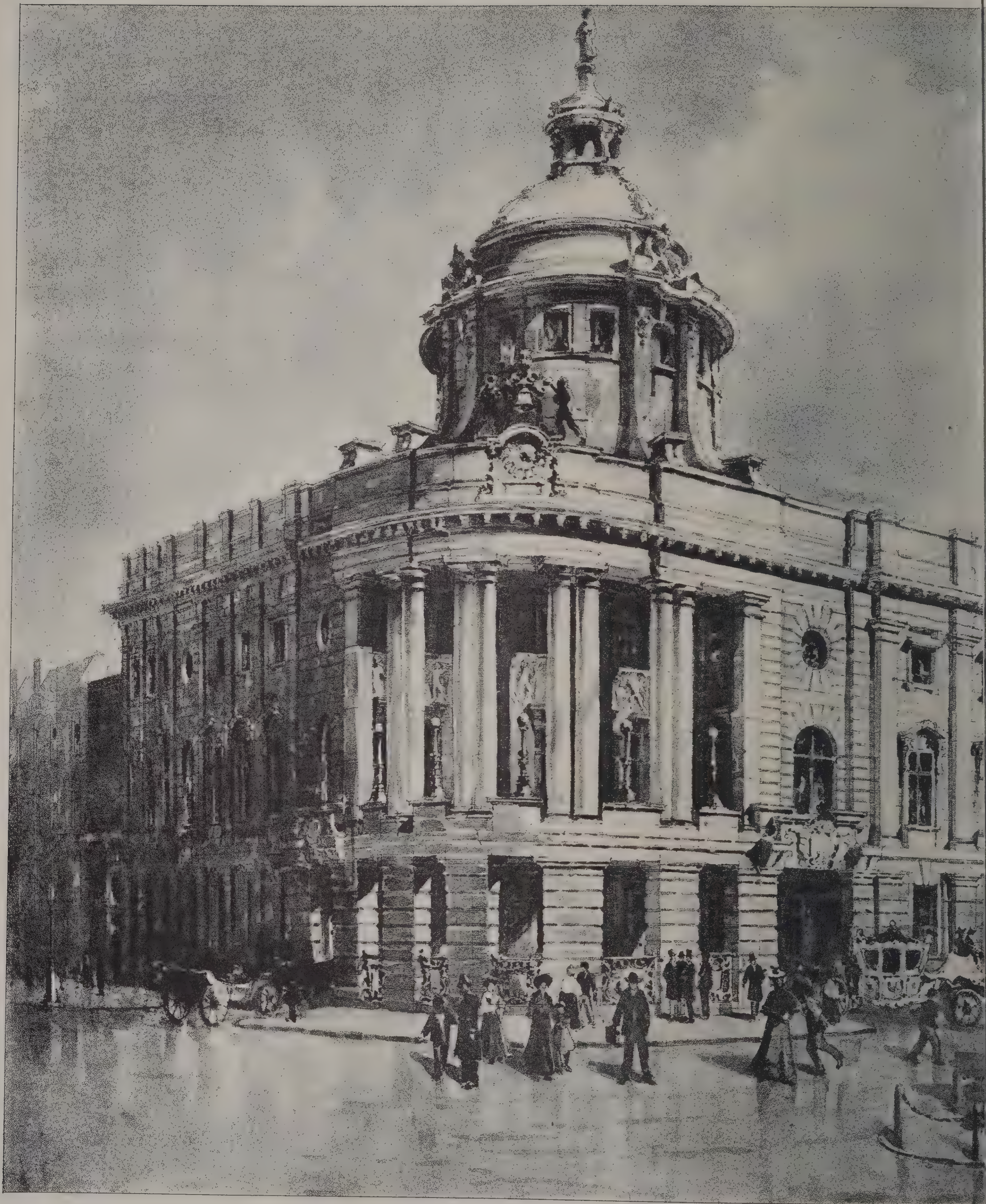

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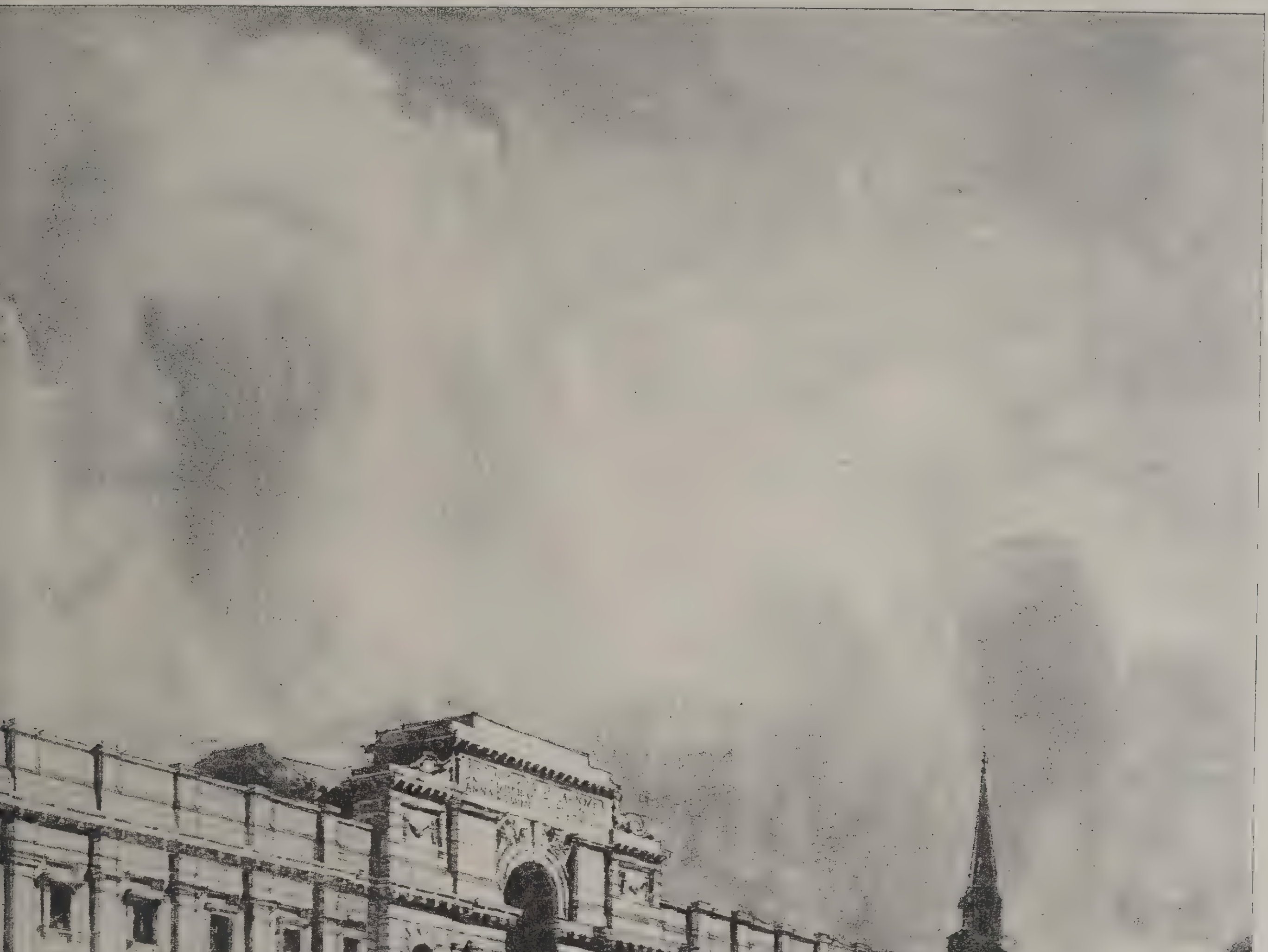

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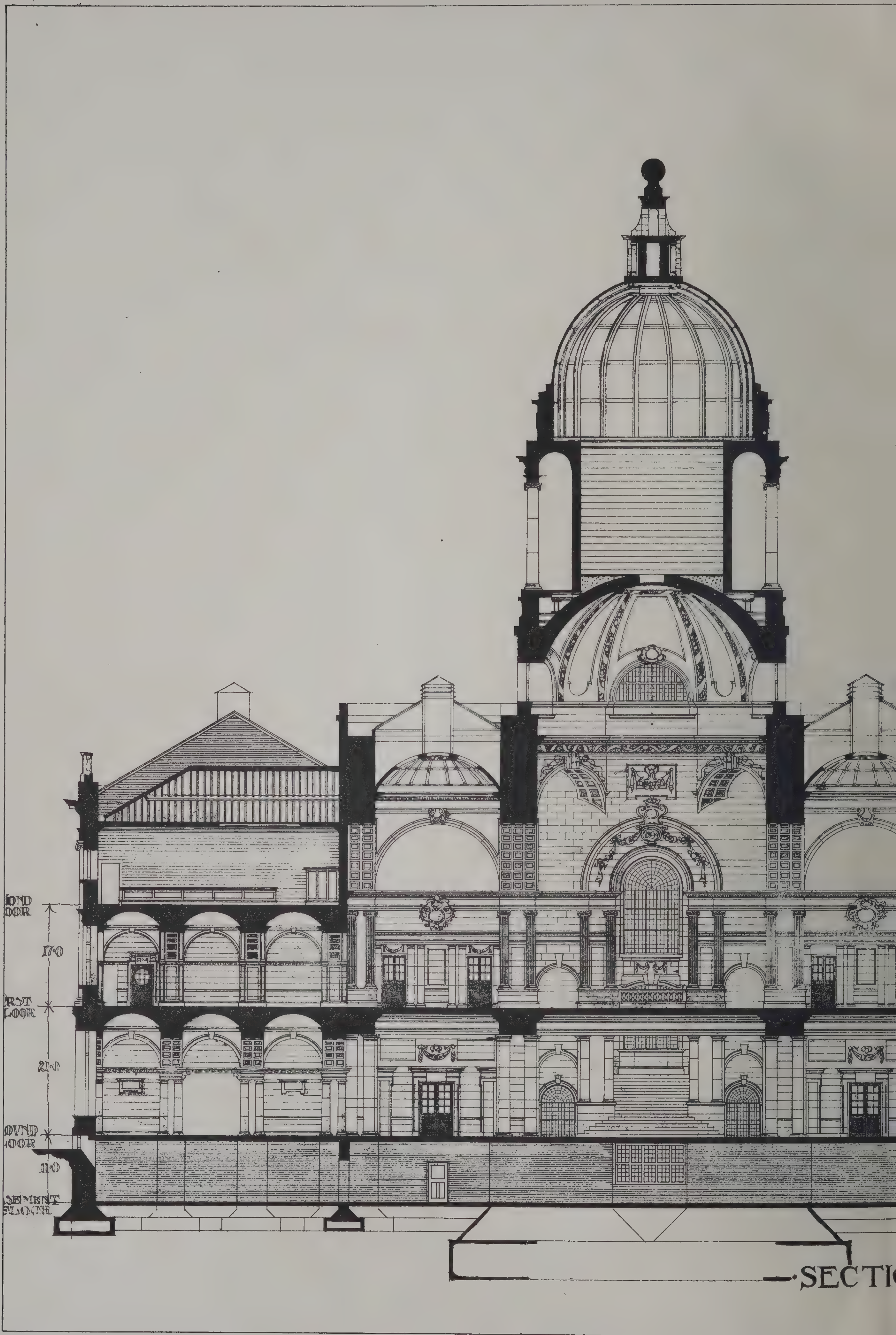

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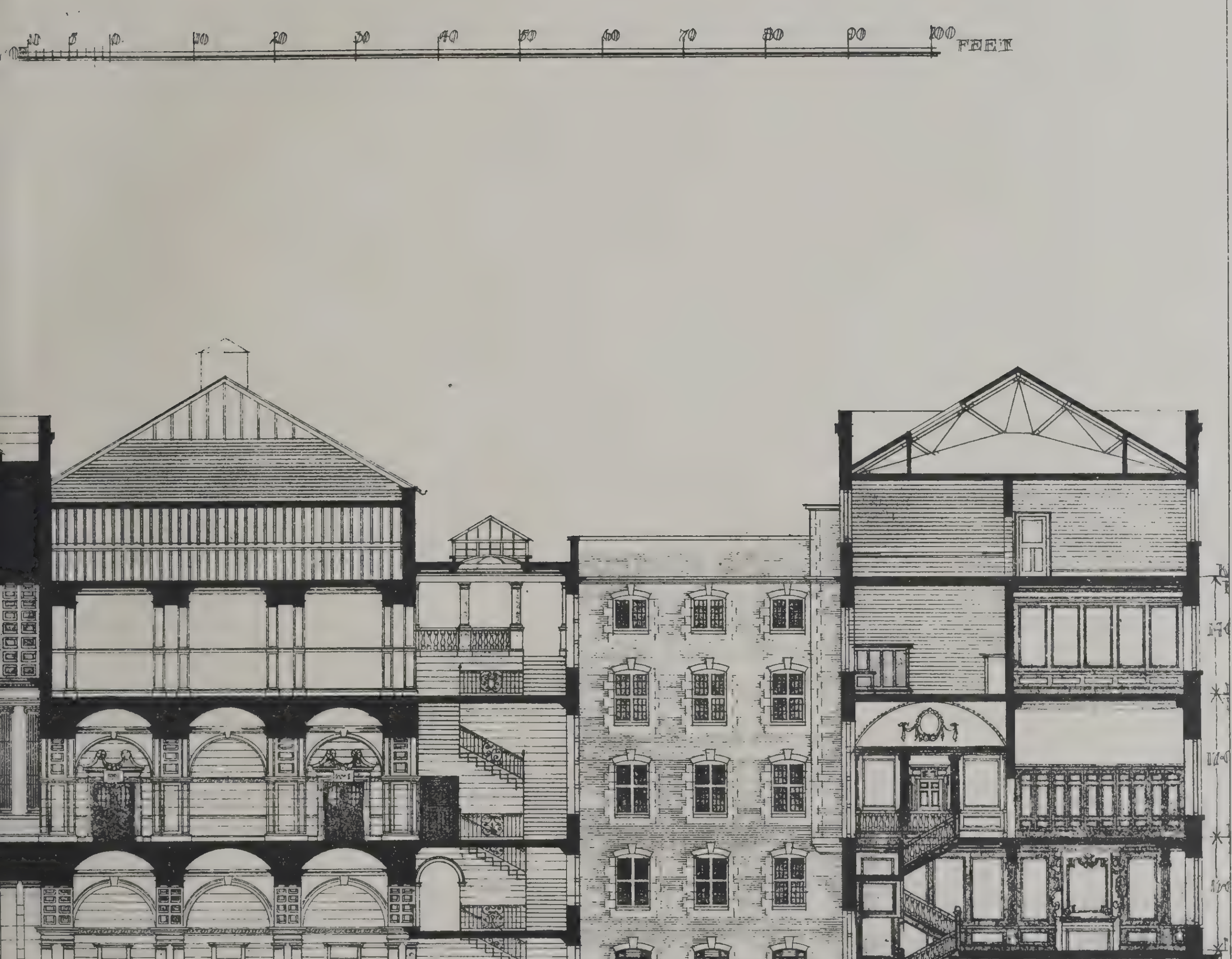

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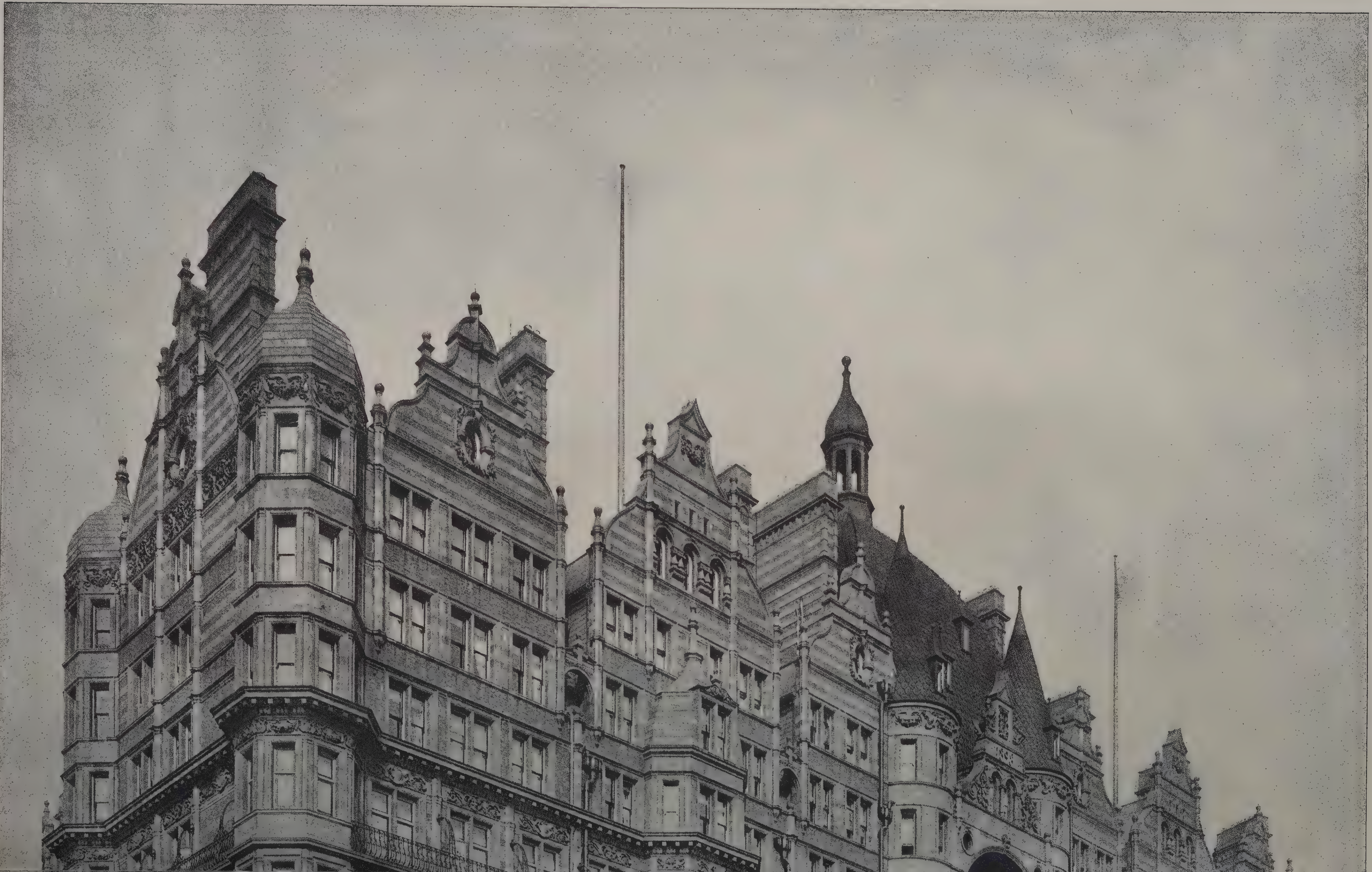

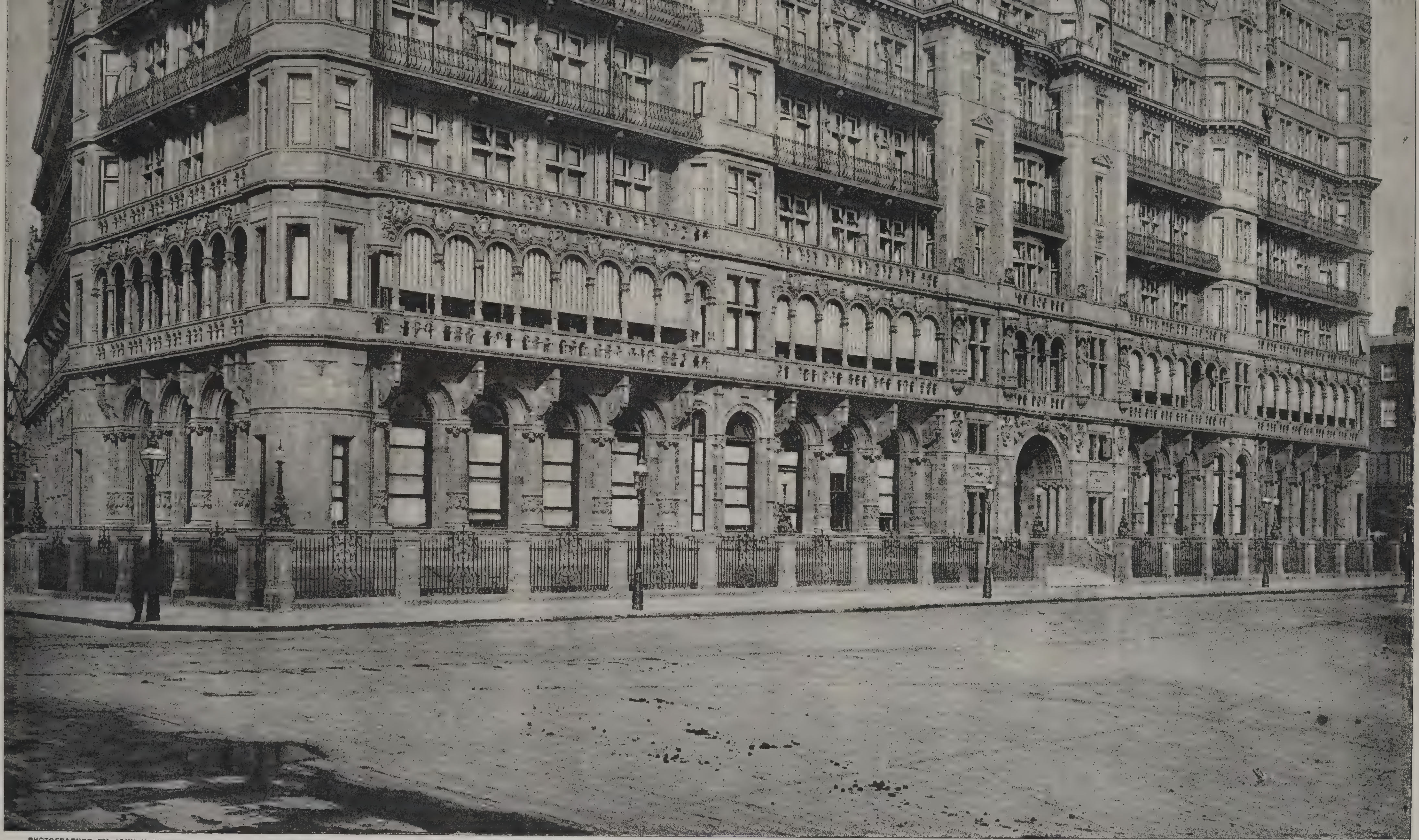

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HOTEL RUSSELL, RUSSELL SQUARE.

C. F. DOLL, Architect.

The Architect.

THE WEEK.

An important decision was given by the Court of Appeal on the 29th ult. in a case Pattinson & Son (appellants) *v.* Stevenson (respondent), confirming an award of His Honour Judge Stonor's, in the Marylebone County Court, as to the capital amount to be paid for the redemption of a weekly sum of 1*l.* payable to a workman by his employers in respect of injuries resulting from an accident. Upon the evidence in the case and the arguments of counsel, and an admission by the parties that the actuarial value of the weekly sum in question for the life of the workman was 750*l.*, His Honour gave the following findings and rulings, which were contained in the note furnished to the Court of Appeal :—"I held that there was no limit to the amount payable on the redemption of the weekly payments in question under the Workmen's Compensation Act or otherwise. I found that the applicant was entitled to the actuarial value of the weekly payments, viz. 750*l.*, less a reduction in respect of (1) the contingency of his condition improving, in which case the weekly payments would partially or wholly cease; and also in respect of (2) the contingency of his dying at an earlier age than the average of human life contemplated in the actuarial value, and I deducted 150*l.* (20 per cent.) in respect of the same, and made an award for the redemption of the weekly payments at the sum of 600*l.*, with costs of the application, the weekly payments to be continued for twenty-one days, and if an appeal be presented, pending the appeal, and the amount of all such payments to be deducted from the said sum of 600*l.*" Lord Justice A. L. Smith, in giving judgment, said that in his opinion there was no point of law involved in the case before the Court. The learned judge had all the facts before him, and he decided that a reasonable sum would be 600*l.* There was an end to the matter. The other Lords Justices concurred, and the employers' appeal was dismissed with costs.

As was to be expected, the London County Council on Tuesday condoned all the excesses of the Works Department by granting money to cover the deficiencies between the estimates and the final returns of cost. Whether the loss exceeds 70,000*l.* or not is of no account. Although the money was granted, it is satisfactory to know there were more than the usual number of expressions of discontent. One member was alarmed because he considered the housing committee would be hampered. Another member considered it was time the Works Department should be recognised as a failure, and to agree to the "happy despatch" ceremony. But perhaps the most alarming part of the discussion was that in which the clerks of works were attacked because they displayed courage to do their duty, and would not pass scamped work. This spirit in some of the members is ominous. The temptations are too numerous which would induce an official to shirk his duties and to close his eyes to dishonesty. But when it is found that influential members appear determined to put down faithful supervision, we must expect to see departures from contracts in many other classes of work besides that of the Works Department.

The Council of the Sanitary Institute have arranged for a meeting in Paris on August 7, 8, 9. The president will be Professor W. H. Corfield. A reception-room has been provided by the Société Française d'Hygiène, who will receive the English visitors at the railway station on August 6. On the morning of the 7th the members will meet in the lecture hall of the Jardin des Plantes, where an address of welcome will be delivered by Professor Grehant, who will subsequently lecture and make experiments in his laboratory relating to his recent discoveries of oxide of carbon in the blood, and the gresomètre. Professor Corfield will also give an address. The members will then proceed to the International Exhibition by steamboat. Luncheon will probably be served on the first platform of the Eiffel Tower. On August 8 Mr. Wynter Blyth will deliver an address and open a discussion on "International Sanitary Regulations with regard to the Prevention of Infectious Diseases." On the 9th Mr. De Courcy Meade will deliver an address introducing the following subjects :—"Purification of Sewage and the Prevention of Pollution of Rivers," "Open Spaces in Towns," "Planning, Construction and Cleansing of Streets, including Subways under Streets." The Paris meeting will follow the conference on the housing of the working classes which will be held in the Parkes Museum, London, on July 30 and 31. The subject for discussion on the first day will be "Unhealthy Areas and Displacement of Town Populations." The speakers will be Messrs. T. Blashill, R. Langton Cole, J. Douglass Matthews, J. Priestley, M.D., John F. J. Sykes, M.D., and others. On the second day the subjects for discussion are :—I. Improved Houses for Town Dwellers, and II. Improved Means of Communications. The speakers will be Messrs. H. Percy Boulnois, C. J. Hair, Mervyn Macartney, J. Priestley, M.D., and others. There will also be an exhibition of plans and models.

A case was heard on Monday at the Lancaster Assizes, before Mr. Justice Channell, in which Mr. John Hutton, architect, of Kendal, sought to recover 147*l.* from the owner of a hotel at Sedburgh for preparing plans and specifications, taking out quantities and advertising for tenders. The case is interesting, for the defendant had not originally employed the plaintiff. Mr. Hutton was called in by a former owner, who asked him to prepare plans for altering the hotel, as had been ordered by the authorities. As the work would cost from 1,800*l.* to 2,000*l.* the owner preferred to sell the property. His tenant, Mr. Chorley, was the purchaser. In taking possession he came to the conclusion that a much larger outlay was required, and he directed that a new wing with dining-hall and billiard-room should be introduced on the plans. The tenders varied from 3,200*l.* to 3,500*l.* Ultimately the building was altered under the direction of another architect at a much cheaper rate. The defendant said that he had fixed the limit at 1,800*l.* or 2,000*l.*, and he was indifferent whether the hotel were rebuilt or altered if that sum were not exceeded. He made a counterclaim, stating that owing to the plaintiff's alleged miscalculation the work was delayed, and that in the interval the prices of building materials and labour had increased. The jury returned a verdict in favour of the plaintiff for 118*l.* 11*s.* 3*d.* and rejected the counterclaim.

We have already stated that this year's Salon was not a financial success. It was known beforehand that the competition with the International Exhibition must involve the Société des Artistes Français in a loss, but it was necessary to give numerous artists the opportunity to sell their works, and the experiment was on that account justified. An appeal was, however, made to the Municipal Council of Paris for a reduction of a moiety of the ground rent. Unfortunately for the Société the Council consists of members lately elected, and who are indisposed, as usually happens in such cases, to temper justice with mercy. The application was refused at last Saturday's meeting. This is to be regretted, for the decision is likely to compel many artists to prefer governmental to municipal control.

A meeting will be held in the Royal Architectural Museum, Westminster, on Friday next, the 20th inst. Mr. Aston Webb, A.R.A., will be chairman. It will be proposed that Mr. William Emerson should succeed the late Duke of Westminster, K.G., as president. Among other business will be the election of officers. It is to be hoped Mr. Maurice B. Adams will be able to continue his services as honorary secretary, for there can be no doubt that by his efforts the Museum has been piloted through many difficulties, and but for him could not have escaped from being wrecked on several occasions.

THE BRITISH MUSEUM.

THE Trustees of the British Museum do not profess to think only of the interests of artists when they make their purchases, but it usually happens that their annual reports contain information which is interesting to them as well as to amateurs. Architects will for example be glad to know that during the past year the Autograph Diary which was kept by James Fergusson during his archæological tours in India between 1837-39 has been acquired. Extracts from it were published soon after his death, and they give vivid pictures not only of the inconveniences which attended travellers sixty years ago, but of the delight of an enthusiast who was prepared to endure troubles of every class in order to attain the knowledge which he sought. An interleaved copy of the Rev. Mr. Robinson's "History of the Mansions and Manors of Herefordshire" is also among the lately received gifts. Another important acquisition has been the second portion of the Buckler collection of topographical drawings made early in the present century, and illustrating ecclesiastical and secular architecture throughout England and Wales. It consists of about 5,000 pencil drawings, interleaved in twenty-one large folio volumes. The majority of the drawings are by John Chessell Buckler, the remainder by his father John Buckler, and by his son Charles Alban Buckler.

The late Baron Ferdinand Rothschild bequeathed no less than sixteen illuminated manuscripts, some of which in character are comparable with the best works possessed by the Museum. They are fifteenth or sixteenth-century work. One exemplifies the fortunate chances in which all collectors believe. This is a Breviary, with beautiful miniatures and illuminated borders, which is evidently an example of French work of the fifteenth century. It is incomplete as received from the donor, but the remainder is happily to be found among the Harley MSS. The Breviary once belonged to the Duke of Burgundy, the famous Jean Sans-Peur, who was assassinated in an interview with the Dauphin at the bridge of Montereau-sur-Seine on September 10, 1419. A thirteenth-century Missal of Gisburne or Guisbrough Priory, co. York, is another addition. Photographs are rarely accepted by the Department of Manuscripts, but some of the "Opus Majus," by Roger Bacon, in the Vatican are an excellent substitute for the original. The work was prepared by the Franciscan monk at the request of the Papal Legate in England, who became afterwards Clement IV. There are several manuscripts of it, but the most interesting is the original in the Vatican.

The Department of Prints and Drawings has secured a very fine design for a frieze by an anonymous artist of the Sienese school. The subject is taken from the Passion, and divisions are marked by projecting figures of the Apostles. A Florentine engraving attributed to Maso Finiguera, containing a large number of figures, is said to be unique, and is an undescribed example of the highest importance. An architectural contribution consists of the ground-plan and elevations of the Minster at Zierikzee, and of the two towers designed by Keldermans, and probably built in 1454, from plates by A. van der Willigen, 1619. The late Sir Edward Burne-Jones has bequeathed a volume containing 223 sketches and studies, chiefly first thoughts for his pictures, mosaics and tapestries, including the "Fall of Lucifer," "Paolo and Francesca," "Death of Abel," "Tree of Forgiveness," "San Graal," "Angels conducting a Shepherd and a King to the Nativity." The name of Owen Jones will always be associated with the Great Exhibition of 1851, which to him as to others was the beginning of a new era. A water-colour drawing of the building by him has been presented. Mention must also be made of a collection of ninety-one original drawings, being designs for glass painting by A. Sybollt, S. Sybollt, D. Lindtmeyer, H. U. Jegli, L. Stadler, W. Kübler, N. M. Deutsch, J. Plepp, J. Amman, J. Werner, J. Visscher, J. Maurer, H. J. Ringli, and other Swiss artists of the sixteenth and seventeenth centuries, acquired by G. Fairholme at Berne in 1829. The Museum is indebted to Sir Benjamin Stone, M.P., and Mr. G. Scamell for 428 platinotype photographs of ancient buildings in various parts of the United Kingdom, executed for the National Photographic Survey and Record in 1898.

The Assyrian section has been enriched by a vast number of tablets relating to properties along the banks of the Hai river, *i.e.* the stream which joins the Tigris with the Euphrates, that belonged to the royal temples built by the kings of the second dynasty of Ur, who flourished about B.C. 2300. Among other notable additions are three "plans," which are supposed to date from B.C. 2500, of ancient Babylonian estates inscribed upon circular clay tablets, with measurements, figures, &c.; four foundation bricks inscribed in very ancient Babylonian characters, with the names and titles of E-annadu, king of Shirpula, about B.C. 4500 (the signs with which the inscription is written are almost pictorial, and are of great interest and importance); and a large cylinder, bearing an inscription of Nebuchadnezzar II., king of Babylon, about B.C. 600. The text on this cylinder is probably the most complete account of the building operations undertaken by this king for the purpose of beautifying and protecting the city of Babylon which has come down to us.

Several of the Greek and Roman antiquities have been rearranged. A new model has been provided of the Acropolis of Athens, and the model of the Parthenon has been cleaned and repaired. Examples of ancient fresco are so rare, it is satisfactory to be able to announce that a panel described as much restored, and as being derived from Pompeii, has been presented. The subject probably represents a winged Hebe floating in the air, and holding up a dish towards Zeus's eagle. The other panel represents a youthful Bacchus leaning on a small Silenus, who plays a lyre; it also resembles a painting at Pompeii. The Department is enriched by four ancient Roman cameos from the Marlborough collection of gems. One is the great sardonyx bearing two imperial heads confronted, which have been identified as portraits of Julian the Apostate and his wife Helena, in the character of the deities Ammon and Isis. A marble head of a hoplite wearing a helmet recalls the head of Pericles which is in the Elgin Room. It is possibly copied from a figure by Creselias. Among the vases is one adorned with a combat of Amazons, which was found at Girgenti in 1830, and was formerly in the possession of Samuel Rogers, the poet.

The Department of British and Mediæval antiquities has received a munificent gift by the bequest of Baron Ferdinand de Rothschild, consisting of the works of art which he kept together in one room in his house at Waddesdon, and which for reasons known to the testator must always be described as the Waddesdon Bequest. They are mainly examples of the art of Mediæval and later times. The exceptions are four bronze medallions found at Samsun in Trebizond, which are the works of Greek artists of the third century B.C., and which formed the handle of a funeral litter. Among the bronze works are two Italian door-knockers. A shield which was once in the San Donato collection was damascened by Georgio Ghisi, of Mantua, in 1554. There are thirty-five examples of the later painted enamels of Limoges. There are seven examples of glass, one being an Arab mosque lamp of the fourteenth century, and an Arab glass goblet which is probably of the same date. Nine pieces of majolica of the decorative kind produced at Urbino in the second half of the sixteenth century are in the collection. The cups of gold, rock crystal, or other hard stone are supposed to be among the most attractive portions of the bequest. The most beautiful is an antique vase of chalcedony, cut in cameo with vine branches and grapes, and mounted in gold in the richest style of the Italian Renaissance.

As one of the rock-crystal vases bears the name "Akbar" in Arabic characters, it may be assumed that it was once in the possession of the great Sultan of that name. Among the jewels is a gold locket, enamelled and set with diamonds, containing a miniature portrait of King James I., by Nicholas Hilliard. This beautiful object was given by James I. to Thomas Lyte, who had made for the king a royal pedigree, reaching as far back as Brut. The silver plate consists principally of German work of the latter half of the sixteenth century. Some of the wood-carvings are on a scale of microscopic minuteness. The bequest is so valuable, the Trustees were right in devoting a special room to it, for only a very few visitors would hesitate at sacrificing, or rather relegating elsewhere, the Roman antiquities found in Britain with which the room was formerly occupied.

Among other additions to the section is a tesselated floor discovered at Thruxton, Hants, in 1823. Along the top is the part of an inscription, viz. "Quintus Natalius Natalinus et Bodeni," the remainder having been destroyed. Such an inscription has not been found elsewhere in Britain. Another acquisition is a massive sepulchral slab of stone, with inscribed panel to the memory of Lucius Sempronius Flavinius, a soldier of the Ninth Legion, who died at the age of thirty, after seven years of military service. It was unearthed at Lincoln in 1830. An ivory statuette found at Lexden, Colchester, in 1884, has been presented. It represents a gladiator in armour, bearing a sword and shield. On the latter a scene of a combat is introduced. Although it possesses no artistic interest, the "osmund," or pointed bar of iron, found at West Blatchington, near Brighton, is not without importance, as it suggests the character of one class of imports into this country from Sweden in the Middle Ages.

We lately referred to the discovery of a slab in Christ Church, Dublin, which related to a member of the Comacini who had found his way to that city *viâ* Spain. Among the gifts of the year is a Spanish tile, which was found during the restoration of the same building. The connection between Ireland and Spain was, however, so continuous, a work by Spanish hands does not appear remarkable.

In the additions to the coins are several new varieties. What is true of that Department is generally applicable. Bewildering as are the collections from the number of objects presented, we may expect to see novelties introduced from year to year. The specialists of the departments are always thinking of the deficiencies which the cases suggest, and which if acquired would increase the interest of the objects which are already possessed by the Museum. The importance of the collections becomes more striking if we remember that only a period of a century and a half has elapsed since Parliament voted 20,000*l.* for the purchase of Hans Sloane's property, which had cost him 50,000*l.*, and was attractive because it was a bargain. Other properties were also obtained on economical terms. So little importance was attached to a museum, it is quite possible the money to buy materials for one would not have been forthcoming without the agency of a public lottery. Montague House was fortunately in the market, and in 1754 it was purchased for 10,000*l.*, a comparatively small sum, for from the un-English character of the decorations and the general splendour of the rooms it was supposed the building was erected by Louis XIV., and was one of his bribes to ensnare English statesmen. Originally there were only three divisions—printed books, manuscripts and natural history. The departments of Oriental printed books and manuscripts, prints and drawings, Egyptian and Assyrian antiquities, Greek and Roman antiquities, British and Mediæval antiquities and ethnography, and coins and medals are later creations.

VALUE OF CHURCHES AT THE REFORMATION.

It is commonly supposed that when the order was made in 1535 for the dissolution of monasteries by Henry VIII. the destruction of churches began. Monastic establishments were then undoubtedly broken up and a great many abbeys and other buildings were damaged. But some years prior to that time there existed much indifference among the people in various parts of England, and as a consequence several buildings were allowed to fall into a state of decay. It was therefore but a step to demolish them or to convert them to secular uses. When Henry VIII. obtained the title of Defender of the Faith from the Pope as a reward for his Latin treatise against Luther, it would have been dangerous to have suggested or to take any steps which might be interpreted to mean irreverence against churches and other ecclesiastical buildings. But after 1527, when application was made to Rome for the sanction of a royal divorce, a change occurred. Wolsey's death in 1530 was practically the beginning of a new era, in which the old laws which made churches appear as sacred things were no longer efficacious. For five years, therefore, prior to the dissolution of the monasteries much could be observed in England which tended to show the beginning of a new state of ecclesiastical affairs.

It would take one or perhaps several volumes to exhibit evidence of the change. But we can find an adequate illustration of what was taking place in many parts of the country by confining ourselves to what is recorded as having occurred in Lincoln. It was a city that could be described as officially religious. In the public celebrations of the Church it was absolutely necessary that the members of the Corporation should bear a part. For example, in 1515 it was arranged that every alderman should prepare two good gowns, which were to be lent to knights and gentlemen who were otherwise unable to array themselves in a befitting style in order to take part in the religious procession. In 1518 it was ordered that every alderman shall send forth a servant with a torch to be lighted in the procession, with a rochet upon him about the Sacrament, upon pain of forfeiture of 6*s.* 8*d.*, and also, under like penalty, send forth one person with a good gown upon his back to go in the procession. Soon afterwards we find that men of every occupation, or in other words, we suppose, the trade guilds, were compelled to contribute towards the religious pageants which were then frequent.

An entry in 1521 informs us how George Browne, alderman, elected in the place of the graceman of St. Anne's guild, complained that as the plague was raging in the city he could not get such garments and "honourments" as should be worn in the pageants of the procession. Whereupon it was agreed to borrow a gown of my lady "Powes" for one of the Maries, and the other Mary to be arrayed in the crimson gown of velvet that belonged to the guild. The Prior of St. Katherine's was to be spoken with to have such "honourments" as had aforetime been lent for the processions and spectacles which were a survival of miracle plays. Entries of the kind indicate that the people at the time and of all ranks, outwardly at least, gave evidence of their zeal for the Church. But after Wolsey's death we do not observe any statements which would suggest a continuance of the same enthusiasm. On the contrary, churches and their belongings were treated in a matter of fact way, as if their old associations counted for nothing.

In the beginning of 1533 we find it stated that the materials of All Hallows Church were sold to Vincent Grantham, one of the burgesses who represented Lincoln in Parliament, for 26*s.* 8*d.* A few months afterwards it is ordered "that the chamberlain of the east ward shall take down the tiles, timber and stone of St. Augustine's Church, as all other churches decayed shall be."

The power which was possessed by the Corporation is not the least remarkable part of the new system. There was a Bishop of Lincoln who in an earlier age would have the government of the churches in his diocese. But at the period which we have under consideration the supreme authority seems to have been vested in the municipality. An order was made in 1534 which announced that as St. Austin's Church and the Holy Trinity Church at the Grece foot, or bottom of stairs, are ruined and falling, the walls shall be taken down, and the stones and all other utensils and necessaries in them be sold. Certain stones of St. Austin's were, however, given for reparation of St. Swithin's Church. The bells of the two churches were to be sold; one-half of the money to go to the common chamber or corporation, and the other half to the parishioners of St. Swithin for the use of their church. Afterwards we read that the Warden of the Grey Friars was to have sufficient stone from the two churches for reparation of his house and church, freely and of charity. Then it was arranged that the parishioners of St. Swithin's were to have the walls of St. Austin's Churchfor 33*s.* 4*d.*

The Abbot of Bardney bought some stones from St. Austin's Church, and some of the stones from Holy Trinity Church were employed in mending the highways in two of the parishes and in making dykes and boundaries. Two buttresses and some of the stone from the chancel were sold to Robert Dightone. St. Bathe Church was also to be demolished, and the Warden of Grey Friars was to get the timber roof. The wall of one side of the building was to be utilised for paving the streets. The distinction between natives and strangers was rigidly marked, but as if church stones were of no importance, those who bought the walls of St. Peter's could sell them to any foreigner.

The order for dissolution in 1535 spurred both individuals and public bodies to efforts for obtaining a share of monastic property. In June 1536 the Lincoln Corporation agreed that if Vincent Grantham, the member for Lincoln, could by any means get the lands and tenements of the cell of the Black Monks to the use of the common chamber, then he was to have the demesne lands of the cell for thirty years, paying yearly 5*l.* But it was soon found there was no chance of obtaining the property unless 60*l.* was at once sent to London, and as there was but little money in the Lincoln Treasury the corporate plate had to be pawned to the Mayor as security for advancing the gold. The Act of Dissolution was not favourable to the preservation of ancient churches. In 1542 another church dedicated to St. Peter was taken down, and the lead, ornaments and bells were sold for the benefit of the municipality. A general order was also made, "If any other church hereafter decay, or the inhabitants in any parish be assigned or disposed to go to any other parish, then the jewels, plate, ornaments, vestments, lead, bells and utensils of such church shall be sold in like manner." St. John's Church in Newport was quickly doomed, and the money obtained for the plate, jewels, ornaments and stone was given to the king. Alderman Fawkener was able to secure one of the chalices for 49*s.*, which was at the rate of 4*s.* 8*d.* an ounce. The church of St. Stephen in Newland was also overthrown, in order that the sheriffs might have the materials in place of the usual 10*l.* allowed to them for the expenses of their office. In the distribution of ecclesiastical property shrewd people contrived to attach a part of it to their own usage without authority. This fact is demonstrated by an order made that the vicar of St. Mary's and Sir Robert Drewry should be called to make account of the stock and plate lately belonging to the Clerks' guild, and the shoemakers to make account of the stock and rents appertaining to the fellowship of shoemakers, and others to make account of the wood and timber of the church of St. John in Newport. We also learn that four parishioners of St. Laurence were decreed to remain in ward until they restored a bell taken by them out of the steeple of St. Laurence, weighing 12 cwts. 30 lbs., or its weight in bell metal, or else 16*l.* The chapel of the High Bridge, Lincoln, was converted into a dwelling-house. The influence of Vincent Grantham, M.P., is revealed to us when we find that he contrived to obtain $33\frac{3}{4}$ cwts. of lead from the chancel of a church for 7*l.*, although it had to be assigned to the king as royal property. A man named York was granted the timber and stone of St. Margaret's, Wikford, in order that he might be enabled to build a house in the city or suburbs. A covenant was entered into with the clothiers that they should have the church of the Holy Rood, with the churchyard and other land, for the making a walk mill and a dye-house of the church, for so long as twenty broadcloths should at the least be yearly made, paying 10*l.* if the twenty broadcloths be not made; provided that if any great plague happened to be within the city, then no advantage was to be taken against them for not making the cloths. The Mayor was to have Trinity Church at a valuation, but apparently he wished to have it presented to him, for later we are informed it was sold to others for 40 marks. We may conclude that most of the buildings changed owners at whatever price was offered by the favourites who were selected to be rewarded. The only instance known where a valuing process was attempted was the church of St. Andrew, and it realised over 130*l.* As an example of a surveyor's estimate in 1551 the document is interesting, and we therefore give it :—

First, the waynescot above the hye alter with the cobert appraised to	vi^{s} viii^{d}
Item, the old chist	viii^{d}
a lectourne	i^{d}
Item, the rodelofte with all thynges perteynynge to the same	xiii^{s} iiii^{d}
Item, the partition of the chappell with the dores	vi^{s} viii^{d}
Item, the selloryng over the tombe	xii^{d}
Item, the waynscott of the selloryng in the chappell, with the tymber in the north yle and chappell	xl^{s}
Item, the plate in the chappell with the plate of other stones in the churche [*i e.* the inlaid brasses]	xl^{s}
Item, the roffe of tymber over the bodye of the churche	xx^{s}
Item, the tymber of the roffe of the quere	xx^{s}
Item, the tyle over the bodye of the churche	iii^{l}
Item, the tymber roffe of the south chappell	vi^{s} viii^{d}
Item, the tymber and flores in the steple	iii^{s} iiii^{d}
Item, the iren leade and glasse in xiiii wyndowes	xl^{s}
Item, three bells	viii^{l}
Item, the steple roffe of tymber	vi^{s} viii^{d}
Item, the leade in the fonte stone	vi^{s} viii^{d}
Item, the leade over the hole churche	lvi^{l}
Item, all the stone of the seid churche and steple	v^{l}
Item, the ii churche dores with the locks	v^{s}

It is also evident that the instrumenta ecclesiastica were commonly sacrificed. In order to prevent further losses to the Municipality, it was ordered that bells, jewels, plate and ornaments should be brought for sale to certain persons appointed by the Mayor, and who might have lived outside Lincoln. The lead was to be melted, and the price fixed for it was 7*l.* 3*s.* 4*d.* for the "fother," the price for bells being 30*s.* per cwt. The truth was, however, the Corporation had no right to dispose of church plate, ornaments and implements, for the Act under which so much was dispersed did not contain any words to that effect. The king's commissioners, when it was too late, demanded inventories of the church goods which had been sold. At Lincoln it was resolved in a secret council to pay one of the commissioners for church goods, named Dalyson, who was a serjeant-at-law, a sum of 40*s.* if he would set his hand and seal to a certificate stating it would be advantageous for such goods to be enjoyed for the use of the city. The entry gives us a glimpse of the corruption which then prevailed among officials. It is also plain that precipitate action in the demolition of churches was stayed when it was almost too late. It was ordered that the chapel on the High Bridge should be repaired, and that it was not to be used as a brew-house, as had been arranged. The parish church of St. John was also to be repaired, although the goods belonging to it were to be sold. The church of St. Laurence was let on lease, on condition that it was to be kept in repair. The church of St. John was also leased under similar conditions; but the arrangements were not carried out in the last case, for an order was made in 1560 to take down the building. A few years afterwards we find that some of the stones of St. Katherine's Church were offered at the rate of 1*d.* a cartload.

The purchasers of monastic property, or those to whom it was presented without direct payment, seem to have been under no restraint about the disposal of what they acquired. In 1591 the city of Lincoln suffered from a dearth of firing. It appears from an official statement that timber, wood, turf and coal had been taken away by greedy persons who were the new owners of the property, and Parliament was therefore implored to pass an Act for assessing everybody within seven miles of the city, in order that money could be raised by means of which the waterways might be cleared, and thus make it possible for wood and other fuel to be brought from the neighbouring counties. The conditions of the case are, in fact, unsatisfactory on all sides. Reform was only another name for destruction. The churches suffered, and, as occurred at Lincoln, were removed without any misgiving that in the course of a comparatively brief period new buildings would have to be raised to take their place. When in a single town like Lincoln we find so many buildings have vanished it becomes manifest that the history of English architecture can never be complete. Beauty found no favour in the eyes of corporations or commissioners. Some of the buildings which were sold for a few pounds or less may have been of a character which would have helped us to solve many of the difficult questions of architectural history.

Messrs. Williamson & Inglis, architects, Kirkcaldy, have been, on the suggestion of Colonel M'Hardy, of the Prison Commission, appointed architects for the new police buildings at Kirkcaldy. Dr. Rowand Anderson, Edinburgh, who was appointed adjudicator on the sixteen plans submitted, placed the plans of Messrs. Scott & Campbell, Edinburgh, first; Mr. Alexander Cullen, Hamilton, second; and Messrs. Williamson & Inglis, Kirkcaldy, third. Colonel M'Hardy, who was asked to look at the three plans and make suggestions, stated that the plan of Messrs. Williamson & Inglis was the one which, in his opinion, most nearly met his views in regard to internal arrangements. The new buildings, which are estimated to cost 16,000*l.*, are to be erected in St. Brycedale Avenue.

PRINCIPLES OF CONSTRUCTION FOR ARCHITECTURAL STUDENTS.

By E. Wyndham Tarn, M.A.

(*Continued from last week.*)

II. *Retaining Walls and Buttresses.*

When a portion of ground has to be sunk in order to form an area, it is necessary to support the earth above by means of a retaining wall, otherwise it will tend to fall down upon the area and to assume its natural slope. The pressure of the earth against the wall depends upon the nature of the soil and upon the angle of slope which that soil will assume when left to itself, and the resultant of that pressure acts horizontally at a point in the wall one-third of its height above the base. The angle of natural slope for dry earth is 45 degs. with the horizontal, for dry clay and dry fine sand or shingle it is 40 degs., for gravel it varies from 27 degs. to 37 degs., and in wet clay it is 20 degs.

In the case of wet clay the pressure against the retaining wall is three times as great as for dry earth; and in the latter case, if the wall has the same thickness throughout, its thickness should equal one-third of its height in order to insure stability, but in the case of wet clay the thickness should be one-half the height. A great saving, however, in the material of the wall can be effected by battering it on the outer face, so that the thickness at base is double that at the summit, about one-fourth of the walling being thereby saved; and the thickness at base should be nearly two-thirds of the height for wet clay and rather more than one-third for dry earth.

In these cases the surface of the upper earth is supposed to be made level with the top of the wall. If, however, the earth slopes upwards from the top of the wall at its natural slope or "talus," the pressure will be much increased, and the thickness of the wall must be about half as much again as in the former cases.

Buttresses.—The object aimed at in building a buttress to a wall is to strengthen it at some particular point at which there is an extra thrust outwards, as in the case of the ribs of a vaulted roof or the principal truss of an open-timbered roof where there is no tie-beam.

The action of a buttress is simply to add weight to that part of the wall so as to increase the resistance which it offers to an overturning force. In the early Gothic buildings the buttress was generally carried up of uniform projection to the top of the wall, as A B C (fig. 1), where A D is the wall, A C the buttress. But this method involved a great waste of material, for if the upper half of the buttress is reduced to half its total projection, as A E C, we shall save one-fourth of the material, while we only reduce the resistance of the buttress by one-eighth.

FIG 1

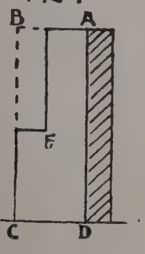
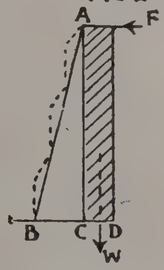


FIG 2



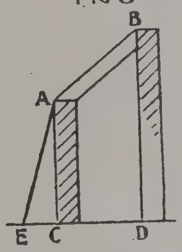
The strongest form of buttress is, however, the triangle, as A B C (fig. 2), for a given weight of material, as the centre of gravity is thrown further back than in the rectangle. It can in fact be shown by the principles of "Mechanics" that we get very nearly as much resistance to a thrust, acting horizontally outwards at the top of a wall, from a triangular buttress as from a rectangular one containing twice as much solid material. This principle we find to have been recognised in the later Gothic buildings, where the buttress is made to diminish upwards by successive steps until it dies into the wall near its summit, as shown by the dotted lines in fig. 2.

For example, we will suppose that a wall 1½ foot thick and 20 feet high has buttresses 2 feet wide at intervals of 10 feet, and that there is a horizontal thrust of 50 cwts. acting outwards at the top of the wall. Then we find by the principles of "Mechanics" that when a rectangular buttress is used of uniform projection and the whole height of the wall, its projection must be 4½ feet in order to secure stability in the structure; but that if a triangular buttress is used its base must project 5 feet, or only half a foot more than the rectangular buttress, which contains nearly twice as much material. The actual material in a triangular buttress projecting 5 feet is to that of a rectangular one projecting 4½ feet, in the ratio of 5 to 9.

In many buildings we find the buttress carried up above the top of the wall and finished with a pinnacle, which not only adds an ornamental feature to the building, but also increases the resisting power of the buttress by increasing its weight, and thereby enabling it to withstand a greater horizontal thrust.

Flying buttress is used when it is necessary to convey the outward thrust from the top of a high wall, as B D (fig. 3), to that of a lower one, as A C, at a distance outside of it. It consists of an inclined arched beam, as A B, formed of wedge-shaped stones or "voussoirs," the lower end of which rests upon the outer wall, A C, of the edifice, to which it conveys the thrust from the inner and higher wall, B D, against which it abuts.

FIG 3



The weight of the flying buttress produces a horizontal pressure against the higher wall, which serves to counteract to some extent the outward pressure thereon, so that this pressure must be deducted from the outward thrust in order to get the correct horizontal thrust on the top of the higher wall.

The weight of the flying buttress will also produce a horizontal thrust on the lower wall equal to that against the higher one, which can be calculated by treating it as a sloping beam or rafter acted on by the horizontal reaction at the top, and by its own weight at its centre of gravity; then the point where the direction of these forces meet will give that of the oblique thrust on the outer wall.

For example, let a flying buttress slant at an angle of 30 deg. with the horizontal, its breadth and average depth being 2 feet; and let the span or distance from outer to inner wall be 10 feet. Suppose the outer wall to be 1½ feet thick and 20 feet high, being strengthened every 10 feet of its length by triangular buttresses, as A E C (fig. 3), 2 feet wide, reaching from the ground to the top of the wall; then it is required to determine what projection should be given to the base C E of this buttress in order to give stability to the structure. Let the horizontal outward thrust at the top of the inner wall be 44 cwts., acting at a height of 26½ feet above the ground. The weight of the flying buttress is 50 cwts., and produces a horizontal thrust of 43 cwts. against each wall, so that the outward thrust at the top of the higher wall is 44 cwts., less 43 cwts, or only 1 cwt, acting at a height of 26½ feet from the base of the outer wall; and the outward thrust of 43 cwts. acts on the top of the inner wall 20 feet above its base. Then, in order to resist these thrusts with safety, we find that the triangular buttress, 2 feet wide, must have a projection of 4 feet at the base beyond the outer wall.

If the flying buttress is placed at an angle of 45 deg., then the horizontal thrust from its weight alone will be equal to half that weight; and the ratio of this thrust to the weight increases as the angle decreases, being in the proportion of 8⅔ to 10 for an angle of 30 deg., and in the proportion of 1 to 3½ when it is 60 deg. But although the ratio of horizontal thrust to the weight decreases with the increase of angle for the same span, yet the weight itself increases in consequence of an increase in the length of the flying buttress. The thrust also at the top of the higher wall is greater as the resistance offered by the weight decreases; the leverage, however, of this force about the point E will increase with an increase of height. With an angle of

45 deg. the weight of the flying buttress is 60 cwts., and its horizontal pressure both ways is 30 cwts.; consequently the thrust at top of the higher wall is 44 less 30, or 14 cwts., and its lever arm about the base E is 31½ feet. Hence we find that the base C E of the buttress must be 4½ feet.

In order to be able to understand the methods of calculating the effects of a pushing force on a wall, it is essential that the student should thoroughly master the principle of the "moments" of forces taken about a fixed point. Suppose a horizontal force F to act outwards at the top A of the wall A C (fig. 2), then its "moment" about the base C is F multiplied by the height A C; and if W is the weight of the wall acting vertically down its centre, and cutting the base at D (where C D is half its thickness), then W multiplied by the length C D is the "moment" of the weight of the wall about C. The former "moment" of F tends to overturn the wall about C, while the latter "moment" of W tends to resist the overturning. When these two are equal to one another, F and W being expressed in cwts. and A C and C D in feet, the wall will be in a condition of equilibrium, and any increase in F will turn it over about C; if the "moment" of F is less than that of W the wall will be in a condition of stability. In order to obtain stability in a case of this kind it is usual to make the "moment" of W equal to twice that of F. Suppose, for example, that F is 50 cwts., A C is 20 feet, the wall is 10 feet long; to find the thickness of the wall for stability we must have its thickness equal to the square root of 20, or 4½ feet. A cubic foot of walling weighs 1 cwt.

(*To be continued.*)

THE CEILING OF THE ROYAL HOSPITAL CHAPEL, KILMAINHAM, DUBLIN.

THE following interesting report by Sir Thomas Drew, R.H.A., dated July 7, 1900, has been presented to the Irish Board of Works:—

In accordance with the instructions of the Commissioners of Public Works of June 15, 1900, I have made a careful study of this ceiling. I have started from the position that an architectural work so remarkable and unique in Ireland, and now ascertained to be the design of Sir Christopher Wren, is one to be preserved, if it be in any way practicable, at any cost.

An impression may have arisen from the fall of some fragments of the suspended stucco enrichments that the whole ceiling was in advanced decay and a condition of general insecurity. I am favourably impressed that it is not so, and that I can assign a cause for the detachment of certain isolated fragments which can be guarded against in future by prudent measures.

The study of this bold construction of the combined art of the carpenter and stucco-worker (the latter probably Italian) is curious and interesting as an example of English workmanship of more than 200 years ago. It is interesting also that while the characteristic identity of wood-carving of this chapel with well-known work of an artist under Wren at St. Paul's leaves little doubt that under like influence—of Grinling Gibbons—was the decorative work of this ceiling designed. The original construction of the roof itself, of which a few of the great timbers survive, was of massive oak stated to have been described, by an inscription formerly existing, as having been cut from the adjoining woods of Oxmantown. From it was suspended for the most part, with excellent carpentry, the elaborate cradling of fir timber which exists, and to which it was the art of the stucco-worker to attach securely his enormously heavy ceiling.

The plain work of the mouldings, panelling and deep coffering was formed by him on the carpenter's grounds on stout split oak laths. He then proceeded, it would appear, to mould by hand, separately before attaching them, each piece of foliage, fruit or flower for his composition. His groundwork or core of each was a convenient spray or little branch of natural oak peeled of its bark, and on this his lime plaster was baked or fingered, and modelled by finger or tool very boldly, roughly and effectively. He then proceeded to group these fragmentary properties artistically, affixing each with plaster, and probably with employment of concealed copper wiring. On the condition of the soundness and endurance of each of these component parts depends chiefly the maintenance of the ceiling.

I find the plaster itself of extreme hardness, excellently handled by a very skilled worker in stucco. The natural oak sprigs used as cores merely are somewhat dozed, but do not, I consider, affect the strength of the outer plaster. Where, however, they have been relied on as an attachment to the ceiling they would demand careful detailed examination.

The oak lathing is sound and good. The fir joisting and cradling of the old work, though dried and somewhat dozed, is in by no means bad condition, and fit with some strengthening to do its work for many years.

The old oak roof framing was of heavy scantlings used, as was often customary, green and fresh from the forest. It had evidently at an early stage twisted and sagged into "winding," and caused the irregularities and winding of the lines of the coffered panelling visible from below and which may be erroneously supposed to indicate a recent instability.

It appears from a published account of the hospital that so long ago as 1843 this ceiling was regarded as in a dangerous state, and measures were taken to secure it. This would seem to have consisted of attaching additional suspension pieces to the old oak roof now removed.

In 1890 it appears to have become a necessity to provide a wholly new roof. I have examined it and studied its construction from the working drawings preserved by the Office of Works. I have been struck with its excellent design as skilful carpentry and its ingenious adaptation to difficult conditions, one of which was to maintain this heavy ceiling and resuspend it from above.

In point of fact, the ceiling with all its cradling and joisting is now ingeniously suspended from the roof framing by innumerable pendant iron straps. I am of opinion that examination will show that it derives little support and rigidity from the walls, and that the original constructional timbers of the coves will be found more or less decayed at their bearing on the walls.

It appears to me that in its present method of suspension there must be an absence of perfect rigidity and a certain element of imperceptible vibration under wind-pressure and changes of temperature. It is also impossible that, however carefully done, the operation of suspending the old ceiling to the new roof could be carried out without some shake to the "key" cohesion of the composite stucco-work, and which accounts for the detachment of enrichments which have fallen. The measures I would suggest would be, first, to erect a scaffolding and stage of flooring boards at the cornice level to enable the ceiling to be examined and dealt with in sections with sufficient light for working. The springing of the cove should be opened up for 4 feet or 5 feet above the wooden cornice to examine the timber next the wall. A corbel course or plate should be fixed against the wall to give a bearing, and the longitudinal bearing joists should be stiffened with bridging pieces put in sideways and tightly, and the whole secured with a bent timber fillet screwed down on them. The coves would then be as rigid as originally, and less dependent on the hanging irons.

The stucco-work should finally be examined in every part from the scaffolded stage, and all loose or doubtful portions repaired and secured. This can be done by judicious tooling-in of plaster-of-Paris, with some fibrous intermixture among the separate enrichments to give them common cohesion and attachment, and by the introduction of copper wiring in any places requiring it. The stucco-worker employed should be skilful, experienced and judiciously artistic in his introduction of such repairs.

ARCHITECT'S FEES IN CAPE TOWN.

IN the Supreme Court of Cape Town, before the acting chief justice (Mr. Justice Buchanan), Mr. Justice Maasdorp and Mr. Justice Solomon, the action of Lucke *v.* Van Coller was heard. Mr. Searle and Mr. Gardner were for the plaintiff, Mr. Graham and Mr. P. Jones for the defendant.

It was brought, says the *Cape Argus*, by Mr. E. B. Lucke against Mr. J. P. van Coller, both of Cape Town, to recover 122*l.* 4*s.* 10*d.*, balance due for professional services rendered. The declaration alleged that in 1897 the plaintiff, at the defendant's request, prepared plans and specifications for a house in Kotze Street, Cape Town, for the defendant. The plans were approved by defendant and passed by the Town Council, but the defendant did not proceed with the work. Plaintiff claimed 40*l.* in respect of these plans. Again, in 1898, the defendant requested plaintiff to prepare another set of plans for a house, which were also approved by defendant and passed by the Town Council. The contract price was to be 1,620*l.* The plaintiff superintended the work, and the defendant is now living in the house. During its construction certain amended plans were prepared for outbuildings and a yard, which were also approved. The plaintiff claimed 5*l.* for this additional plan, and 81*l.* on the contract price of the whole building, being at the rate of 5 per cent. There were also certain small items for taxes and advertisements paid at the request of the defendant, who had only paid 5*l.* on account of the whole amount, leaving the balance now claimed.

The plea denied most of the important allegations. As to the first set of plans, defendant denied that he requested plaintiff to prepare them, and said that the request came from the plaintiff, who made plans which defendant refused to accept, and he alleged that they were approved by the Town Council without his knowledge. As to the second set of plans, the defendant said that the plaintiff prepared other plans without his (defendant's) permission having been given. On being assured, however, by the plaintiff that the plans contained everything necessary in the matter of drainage, defendant accepted them. In December 1898, however, defendant found that there was no provision in the plans for drainage, and a further sum of 116*l.* was necessary to put drainage in. He would not have adopted the plans if it had not been for the plaintiff's representation that drainage was included. Defendant alleged that owing to plaintiff's carelessness and negligence he had been put to an expense of 148*l.* (including 116*l.* for drainage), 32*l.* for the cost of work wrongfully passed by plaintiff, and 46*l.* for money lent.

The plaintiff, who had not recovered from a broken leg, was allowed a seat in the well of the court. He bore out the statement in the declaration, and admitted that he owed defendant 40*l.*, for which he gave some title-deeds as security, which deeds the defendant now held.

Cross-examined by Mr. Graham, the plaintiff said he had not lately been practising as an architect. He could not get about very well on crutches. He had been an architect for ten years.

Mr. Graham: Where did you qualify?

Plaintiff: In the Public Works Department—private instruction.

Who instructed you?—There was Mr. Schwartz.

Where is he now?—In America.

You never were in an architect's office?—No, never.

Mr. Justice Buchanan asked what was the object of these questions?

Mr. Graham said he wanted to show that plaintiff's knowledge and supervision were such that he was not entitled to fees as an architect.

Mr. Justice Buchanan: Your client employed him as an architect, however.

Mr. Graham (to plaintiff): You have been a law agent part of your time?

Plaintiff: Never to my knowledge.

Or an insurance agent?—Yes, for three months, about twelve years ago.

And you embezzled money and were convicted?

Mr. Searle protested against the question, and

Mr. Justice Buchanan said that unless the questions were absolutely necessary they should not be put.

Plaintiff (replying to Mr. Graham's question): No, I was not. Oh, no. I have not embezzled money, and was not convicted.

Mr. Graham: Not for theft?

Plaintiff: No. Proceeding, he said that he did not propose the plans according to his own risk. As an architect he held that the specifications contained ample provision for the drainage. The work was badly done by the contractor, and witness was thoroughly dissatisfied with it.

Mr. Justice Buchanan: Hasn't there been a decision of the Court in regard to plans not used?

Mr. Graham: Yes.

A good deal of correspondence between the parties was put in, in which each complained of neglect in one direction or another, and each blamed the other for various faults or grievances. Amongst the expressions from defendant to plaintiff and from plaintiff to defendant were "sickening," "disgusting," "properly tired," "honestly tired" and "fed up."

Mr. David Watson, who was with the plaintiff when the house was being put up, said he frequently inspected the building, and as frequently had to complain of defects through the contractor's negligence. There was no supervision of the building.

Paul Johannes van Coller, of the Telegraph Branch of the Post Office, said that Mr. Heckroodt introduced the plaintiff as an architect. Plaintiff afterwards pressed him to let him prepare plans. Witness was not very keen upon building just then, but plaintiff made plans at his own option. Witness saw that the proposed house would be too expensive—more than 1,620*l.* He signed the plans in ignorance of what he was doing. Plaintiff then said he would make other plans. Witness engaged one Oliver to build the house for 1,620*l.*, and he also accepted plaintiff's plans, but he never saw the specifications, as plaintiff always evaded producing them. He said they were like the first lot, only less, and they included drainage. Witness now recollected that he did see the specifications of the second set of plans, but he gave them to Oliver and did not study them. He would not have built at all if the drainage had not been included. Oliver went insolvent before the building was finished. The charge made for the drainage was 122*l.*, but witness compromised with Oliver's trustee for 60*l.*

Mr. Justice Buchanan: It is a pity you didn't look at the plans and specifications.

Defendant: I thought I was dealing with a friend. I am not conversant with building.

Mr. Justice Buchanan expressed his surprise that defendant's attorney had allowed him to pay the 60*l.* when he hadn't got the architect's certificate.

Witness said he paid for material used in the house, otherwise the building would have had to be stopped. From the necessities of the case he had to make such payments as he could never find the architect in.

Cross-examined: Every month he made payments to Oliver as he wanted the building finished and could not find Lucke. Although he signed the plans he held that he had not accepted them, and he was not responsible for the plaintiff advertising for tenders. Witness never intended going above 1,600*l.* including architect's fees. All but one tender was below 1,600*l.*

Mr. Walter Oliver, builder, said that in the plans and specifications he worked on there was no mention of drainage. A day or two after the contract was signed he spoke to Lucke, who said the drainage would be an extra.

Cross-examined: Witness said he knew that drainage would have to be provided, Lucke authorised him to proceed with the extra. Builders always relied on the word and authority of the architect. The contract was rather a low one and there was very little profit in it. Witness would have finished the building if he had not surrendered his estate.

Re-examined: At first Lucke supervised the work efficiently.

Mr. Edward Austin Cook, architect, Cape Town, said the work put into the house was very bad all through. There was a big crack in a wall, the plaster had come off the walls, and wood had been mixed up with the cement with which the yard was covered. The joinery work was bad and the doors and windows did not fit. He should not like to say there had been proper supervision.

Cross-examined: He only saw the house recently, and he could not say what parts he would have passed as good work two years ago.

The Acting Chief Justice gave judgment for the plaintiff for 83*l.* odd, including 81*l.* for supervision and plans, and judgment for the defendant for 46*l.*, with 3*l.* interest, leaving a balance of 32*l.* in favour of the plaintiff. Costs were given against the defendant.

DEVON AND EXETER ARCHITECTURAL SOCIETY.

The members of this Society recently visited Ottery St. Mary. Those present included Mr. C. J. Tait (president), Messrs. J. Crocker, J. Jerman, John Pinn, A. Pinn, O. Ralling, E. Hooper, Harbottle Reed (hon. secretary), also the Revs. O. Reichel and W. Hope, together with several friends. They were met at the station by the Rev. F. B. Dickinson, and a visit was first made to Cadhay House, over which they were courteously shown by Mrs. Collin. It is a delightful old mansion, with picturesque elevations, but its great charm is the inner quadrangle or court of the kings, with flint and sandstone in alternate squares, resembling the work so frequently to be seen in the churches of East Anglia. The courtyard is entered from four doors, over which are effigies of Henry VIII. and his children, Elizabeth, Mary and Edward VI., the portraiture of bluff King Hal being of a quite effeminate type.

The party then proceeded to Ottery Church, where the Rev. F. B. Dickinson read a most interesting paper upon the architectural history of the collegiate church of St. Mary, which is a half-size copy of the cathedral. He showed by diagrams its gradual development under Bishops Branscombe and Grandisson, and explained the disposition, so far as known, of the college buildings founded by the latter prelate after purchasing the manor from the Dean and Chapter of Rouen. Some amusing references were made to the bargaining which went on between the parties. The addition of the Dorset aisle, with its beautiful fan vaulting, was explained partly from the fact that only the nave and north transept were assigned as a parish church, the remainder of the building being occupied by the college. There are many puzzling features about the structure, which cannot be explained away, as one archæologist attempted to do after spending an hour and a half in the church, which he declared to be the freak of an architectural crank who built in a past style.

Mr. Dickinson then entertained the party at tea in the Old Manor House.

The Will of the late Mr. Bruff enjoins that the oil-painting *Sophonisba*, attributed to Rembrandt, is to be offered for sale to the Trustees of the National Gallery, and the painting *Colne Valley*, by Edward Smyth, a portrait of John Locke, and a picture by Russell are to be offered to the Ipswich Corporation.

NOTES AND COMMENTS.

In the civil list of pensions for the year ending June 20, and amounting to 1,200*l*., painting and sculpture are represented by a sixth. Mrs. Euphemia Hill Macallum, in consideration of the merit of her husband, the late Mr. Hamilton Macallum, as a painter, is to receive 100*l*. a year. He was known as an excellent painter of Scottish scenes, and if he had lived he must have attained a position that would have enabled him to leave his family independent. The three daughters of the late John Hogan, the Irish sculptor, are each granted a pension of 33*l*. We believe a pension of a larger amount was given to the family soon after his death, but the circumstances of the case warrant a little liberality. John Hogan resided at Rome, because he considered it to be the capital of art, until the revolution of 1848. He then returned to his native country, Ireland, but as it was imagined he belonged to the Republican party he lost the support of those classes from whom he expected commissions. He had to endure many disappointments, and his troubles may have hastened his death. Few will object to the appearance of Mr. Sims Reeves's name in the pension list. He aided in advancing music in this country, and in his old age the memory of his waywardness should not be allowed to interfere with his claims to a reward.

Andernach on the Rhine was known in the time of the Romans as Antunacum. It was no doubt an important station for colonists who took so much interest in architectural and building works, as stone is easily obtained of a kind which can endure for ages. When the Romans left it became an Imperial town, and continued so until the fifteenth century. Evidence of Roman occupation has been lately discovered. In the course of excavations for the provincial museum remains of an ancient building were met with. It must have been of some importance, for the doorway was flanked by massive columns nearly 30 feet high. There was also a round tower which must have been vaulted, and was probably used for watching. Towers it is known were a common feature in the district, for the principal church of Andernach has no less than four. The discovery will add to the interest of the place, which by geologists especially and lovers of scenery is well worthy of attention.

The courses of architecture in the University of Pennsylvania are in the charge of several professors and lecturers. Either of two separate courses can be followed. One is the four-year course, leading to the degree of bachelor of science in architecture, and the other is a two-year special course, leading to a certificate of proficiency. There is also a three-year special course in interior decoration, independent of the architectural courses, and leading likewise to a certificate of proficiency. The most important division of the professional work of the four-year course pertains to design, and to this subject, in its various phases, the relatively largest portion of the student's time is devoted. Instruction in design is carried on by means of problems requiring for their proper solution from a month to six weeks, and demanding careful attention to practicability and construction, as well as to the purely artistic in composition of plan, façade and interior. This work receives the constant supervision of the professor of design, being developed under the influence of judicious criticism, of both previous and concurrent study of history, and of constant use of library resources. The current work in design is enlivened by a monthly sketch problem, to which a single full day is given by all design classes alike. Upon completion of each problem the class work is reviewed by a selected jury of architects, which awards mentions to the best, and renders a criticism of all to the class. A unique and important correlated course in the fourth year is that of design in historic ornament, based upon original problems in the composition of ornament. Tuition fees for the courses in architecture are 150 dols. per annum, and for the course in interior decoration 50 dols. per annum. We have received a collection of reproductions of designs by the students. They are evidence of the immense influence which French architectural work exercises in America. The imitation is often very close, and the drawings might have been prepared in one of the art schools of Paris. Much can be said for and against the system of selecting one class of models and no more, but the attention to French work can impart qualities which would be advantageous in the employment of other types of architecture when in practice.

The Emperor of Germany has remembered his visit to Constantinople in 1898, and Berlin workmen are now busy in erecting in Stamboul a memorial of the event. It will take the form of a remarkable fountain, and stands on the Place Meidan, near the ancient church of Agia Sophia. The structure assumes an architectural form and will be surmounted by a dome. Part of the building will be in Carrara marble. The columns will be of polished Labrador, with capital and bases of bronze. A frieze and other decorations will be in glass mosaic. An inscription in Arabic will record the name of the donor, and here and there Arabic proverbs will be inscribed. The design for the fountain is to be credited to the Emperor and the works are carried out under the direction of Herr Spitta. Water receives so much reverence in the East it was a happy idea to select a fountain as a memorial of a visit which was supposed to be due to interest in the Turkish race and the Sultan's dominions.

We announced some time ago the resolution of the Glasgow Corporation to make an experiment in the mural decoration of their Municipal Buildings. The arrangements were entrusted to Mr. William Leiper, R.S.A. It was decided to have four panels introduced in the banqueting-hall, and commissions were accordingly given for Glasgow artists to produce them. There is so little mural painting attempted in England, and some examples of immature work are due to hasty production, that Glasgow artists had some reason on their side when they resolved to be deliberate in taking part in the experiment. But since the project was mentioned the walls appear to be more vacant than formerly. Dissatisfaction was expressed by members of the Corporation, who consider no doubt that monumental painting should be subjected to the same rules as ordinary business transactions. There were remonstrances with the artists, and their explanations have not been considered altogether satisfactory. With that class of painting much depends on inspiration, but a bailie would not consider a motive power of that kind to be deserving of much consideration. It appears, however, that at least two of the paintings will be ready by the end of the year. But it would be better to wait for a longer time to obtain the results of mature thinking.

Among those who have endeavoured to convince the public about the necessity of having secure and healthy theatres a prominent place must be assigned to Mr. W. P. Gerhard, a consulting engineer of New York. To his statement at a public meeting, that "chemical analyses show the air in the dress circle and gallery of many a theatre to be in the evening more foul than the air of street sewers," his countrymen were incredulous. But later investigations confirmed Mr. Gerhard's words. It must also be manifest that the parts of theatres assigned to the performers are if possible in as unsanitary condition as any in England. Mr. Gerhard has now published some of his writings in a compact volume, entitled "Theatres, their Safety from Fire and Panic, their Comfort and Healthiness" (Boston: Bates and Guild Company), which should be studied by all who take an interest in a subject which affects the public health in all countries where the mirror is held up to nature. The author has no patented panaceas to recommend, and all he says is derived from experience and is expressed without exaggeration.

ILLUSTRATIONS.

LICHFIELD CATHEDRAL: THE NAVE, LOOKING EAST.

SELECTED DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY: DETAIL ELEVATION. MEZZANINE BETWEEN GROUND AND FIRST FLOORS. E. W. MOUNTFORD, F.R.I.B.A., ARCHITECT.

DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY: DETAIL OF MAIN ENTRANCE. HALF INSIDE ELEVATION. PRINCIPAL FLOOR PLAN. INTERIOR OF COURTS. INTERIOR OF HALL. BY J. BELCHER, A.R.A.

FROM LONDON TO PARIS IN 1750.

THE journey from London to Paris will be made by many people during the present season. But from the means employed little is seen of the objects, and especially the buildings, which were familiar to travellers in the eighteenth century. The gain in time by a modern railway journey from Calais or Boulogne to Paris has therefore some drawbacks. A graphic unaffected letter which has been preserved from the Rev. John Nixon, M.A, suggests that the slow travelling of a century and a half ago was not without compensation. It was not the writer's first trial of the road, but it appeared more agreeable than when first seen He was rector of Cold Higham, near Towcester, and in the British Museum there is enough evidence of his competence to write odes and essays as well as sermons and letters. He was also an authority on archæology, and on that account he gave more attention to the French buildings he saw than was common with the majority of tourists :—

The subject of my present letter will be an account of my tour last summer, which began on June 10. On the 11th I arrived at London, and set out after dinner with my old fellow-traveller in a post-chaise for Dover, which place we reached about seven next morning, and (after a very rough passage, which made me inexpressibly sick) got to Boulogne by midnight. When we arrived next day at Abbeville, I remonstrated to my friend that the direct road from that place to Paris through Picardy was what I had passed before, and that it would afford no entertainment even to a stranger: therefore I desired we might diversify the route by striking out on the right hand, and so passing through Normandy.

To this he readily consented, and accordingly next morning (June 14) we bent our course south-west and travelled through an open country, the soil of which seemed to be generally light, and produced corn of all sorts, besides flax; and at proper distances appeared several villages enclosed without, and also lined within with rows of trees, chiefly elms. Seven leagues brought us to the confines of Normandy, which province we entered near a pleasant little town called Ville d'Eu, where there is a château, park and gardens by the side of a clear river belonging to the Duke de Dombes. After six leagues more we approached Dieppe, which, with its harbour and environs viewed from an eminence, afforded us a very agreeable prospect It is a seaport and lies low; the principal streets are long and well built, particularly the quay where is the *cours* or mall. The most remarkable commodity here is ivory, wrought and carved in all manner of curious forms from the solemn object of superstitious worship down to the lowest toy suited to please the taste of a lady or a beau.

After dining at Dieppe we entered upon the fine new road, which is now making from this place to Rouen—a thing greatly wanted in this country, the natural roads being exceedingly bad. It is very large and magnificent, consisting of a broad stone *pavée* in the middle, and spaces of the natural ground on each side The expenses of this, as well as of all other works for the public utility here, are defrayed out of the king's Exchequer. It begins with an ascent from the town in the manner of a regular hanging slope for about half a mile, for the effecting of which the hill is in some places cut down several yards deep, and as you advance further the valleys are filled up to the same height, subterraneous surfs or bridges being left in the lowest places to drain off the waters. The extremities of these bridges appear on each side adorned with white wrought stone in an elegant manner. The direction of this road runs in a straight line, sometimes to so great a length that the rows of trees which bound it on each side close upon the eye before it can reach a turning. The country hereabouts is much the same as that between Abbeville and Dieppe, viz. open, full of corn, woods, villages, &c.

We lay that night at a village called Tôstes, six leagues from Dieppe Here we saw a little country house of M. Ronquier, and his farm of about 2,000 livres per annum, which gave us a specimen of the manner of disposing the conveniences requisite for a farmer in this part of the world. Within a large square orchard, planted in a regular form, was situated the dwelling-house in the principal point of view, like the general's tent in an army, the several buildings of an inferior order, viz. barn, stable, granary, carthouse, &c, being all separate, and placed at due distances in a line within the same area. This spot was fenced round with a deep ditch, and a raised bank next to the orchard planted thick with elm trees. Around the whole on the outer side ran two or three walks of beech trees, which lead to little groves or plantations on the waste ground near the open field. In our next day's journey we saw several other gentlemen's seats, with their farms in this disposition, which (with the long vistas of apple trees growing naturally with round heads and running in several directions through the open cornfields) have a most agreeable effect, and give this country the air of one continued garden or orchard.

After six leagues from Tôstes we approached Rouen by a descent extremely fine On the left was a regular row of little hills, with gentlemen's seats, villages, &c, spread along them. Below appeared the town in an oval form, its greatest extent being from east to west; beyond it to south-west lay the Seine, skirted by a long series of hills, each sloping down towards the river in the figure of dovetails or triangles, as if made by art. Rouen for many ages was reckoned the second city in France, and is now the capital of Upper Normandy. It is in compass about 1¾ league, and enclosed on three sides with hills, two little rivulets running through its streets. It contains thirty-seven parish churches, seventeen chapels, forty-eight monasteries, thirty-five public fountains, five gates on the land side and thirteen towards the river. In one of its seven principal market places, viz, marché de veaux, stands a fountain, having on its top the effigy of poor Joan of Arc, who was cruelly used, and at last burnt on this spot by our countrymen. Charles VII. of France reversed her sentence and declared her innocence, erecting at the same time this monument to her memory, and ennobling her three brothers.

This city is a place of great commerce, being the repository of all the commodities imported from the ocean into France, which are first landed here, and from hence transmitted to Paris, &c., for which purpose it is furnished with several warehouses, reckoned the largest and most convenient in the world. Its streets (though narrow) and its public buildings are very good, especially the cathedral, a most magnificent Gothic structure 408 feet long, 83 feet wide and 84 high. On the croisée rises a tower 152 feet high, and which supports a steeple 380 feet high. The choir is sustained by fourteen columns, and enclosed by a screen of copper. The grand altar is separated from the choir by a balustrade of the same metal, and four pillars, with an angel on the top of each pillar. In the middle of the choir is the tomb of Charles V., whose figure of white marble holds his heart, which was deposited here, in his hand. On the right side of the altar is the monument of our Richard I., and on the left that of his nephew [*sic*] John, son of Henry II. The famous Duke of Bedford, formerly Regent of France, was buried near the altar. In the chapel of the Blessed Virgin, behind the choir, you see the magnificent mausoleum of the two Cardinals d'Amboise, uncle and nephew, whose figures are kneeling upon their tomb in a posture of devotion. The base is adorned with six figures of good workmanship, representing six virtues, each in its separate niche or shrine. One of these gentlemen (among other very considerable benefactions) gave the great bell which hangs in one of the towers, and still bears the name of George d'Amboise. It weighs 36,000 lbs., is 30 feet round and 10 feet high. They tell you that the founder of it was so well pleased with the success of his art that he died for joy the nineteenth day after it was hung.

Another thing which deserves our admiration here is the fine quay, very large and spacious, running along the north-east side of the river, at the end of which are the venerable remains of a castle, begun to be built by Henry V. of England, and finished by Henry VI. 1443. From the quay there is a passage over the river by a bridge of boats, 270 paces long, and so contrived that in case of any imminent danger from floods, flakes of ice upon a thaw, &c, it may be taken to pieces in six hours' time, and restored again without any damage. A passage is opened in the night in the middle of it for vessels to go through, and it rises and sinks with the tide, which at Rouen is remarkably high and violent. On the other side, facing the city, is a row of buildings, chiefly belonging to the public; one of them, viz. *grenier à sel*, is a very magnificent structure. Further on to the left hand lies the mall, esteemed the best of its kind in France It consists of one grand alley and two smaller ones, reaching near a mile in length, on the borders of a meadow by the bank of the Seine, commanding a most delicious view of the city, river and the chain of hills mentionedabove, at the foot of which runs the great road to Paris.

Our road from Rouen to Paris gave us frequent and most delightsome views of the Seine, sometimes on one hand of us and sometimes on the other. For as this river serpentises through the whole length of our way in a very remarkable manner, as if unwilling to quit so charming a country, we had occasion to cross it in several places.

The first thing we saw worthy of notice was Vaudreuil, about five leagues from Rouen, the seat of M. ——, a president of the Parliament of Paris. It consisted of two corps or wings, separated from each other by a large space, which gave entrance into a fine parterre of flowers, with bousquets or arbours of trillage work on each hand. Beyond this was a large wilderness laid out in walks, and a vista extending near half a league, which was the length of the gardens. In pursuing this walk we crossed the river Urz, which dividing itself into two branches, encloses the whole spot. In one part we came to an *étoile* of several points, from which we saw the boundaries all around, which were hills of several forms and sizes. On the brow of one of them stood a large venerable convent called De deux Amans, the reason of which name our guide was not able to explain to us.

After four leagues we came to Gaillon, a bourg belonging to the archbishops of Rouen, who have here a country seat of residence. This is a noble castle, boldly situated, and built in a very magnificent (though Gothic) style by George d'Amboise, formerly archbishop of the see above mentioned, and since greatly embellished by the Cardinal de Bourbon, and would be little inferior to any palace in France had it an entrance proportionable to its grandeur in other respects. It consists of two courts, the first of which has a large fountain in the middle of it; the buildings which compose its sides being very richly ornamented with the busts of Roman emperors and triumphs, &c., in relievo. In the upper part of the second court is a fine orangery in the form of an amphitheatre; the lower side has a corridor of several arches built of white stone, through which you have surprisingly pleasant views of the adjacent country for some miles. On the right hand gentle hills in vineyards with tufts of woods present themselves to your view; on the left you have the same, while the Seine, serpentising through the plain below, appears in one part of it like a grand canal formed by nature as on purpose to adorn the prospect from the castle. The building within consists of two grand apartments, one below, the other above, each containing a good suite of rooms, unfurnished, and terminating in a gallery. From each of these state apartments (as the castle stands on the side of a hill) you enter into a parterre in the gardens, of which there are two or three, rising above each other, being supported by very high walls and laid out in grass-plots, walks and a little grove of limes under the wall of the next parterre above. Adjoining to these is a park of about 800 acres.

At about three-quarters of a mile from the castle, in the plain, is a large well-built convent of Carthusian monks, founded by the above-mentioned Cardinal de Bourbon, Count de Soissons, who with his wife, son and daughter lie buried in one of the chapels belonging to the church. On the top of the tomb, which is a stately mausoleum of black and white marble, are the effigies of the cardinal and his lady lying along; on the sides are those of their children. The figures of the four cardinal virtues support the four corners of the stone. The church is large, but devoid of all decorations. The cloisters enclose the burying-place (as is the manner in all the monasteries of this order that I have seen) and are very spacious, having cells for twenty-one fathers and nineteen brothers. The solemnity of this appearance, increased by the profound silence which for ever reigns within these walls, naturally inspires the stranger with a sort of religious horror, suspending for awhile every sentiment which has any of the joys of this life for its object.

After having breakfasted for the first time in the true French taste, viz. on bread and butter and raw young artichokes cut in slices and seasoned with salt and red Burgundy vinegar, we proceeded on our journey, and after three leagues travelling reached Vernon, a bourg on the Seine. A little before we came to this place we turned up on the right about a mile out of the great road to see Belle-Isle, a seat belonging to the duke of that name. The house itself is but indifferent, but as you go up to it you have on your right hand a magnificent range of building of white stone for offices, servants' lodging, stables, &c., with eighteen or twenty large windows in front. In the centre of this building you enter by an arch into a square court, in the middle of which is a watering-place for horses, with a fountain always playing. Above this, in the same line of direction, one perceives through an opposite arch in the back part of the court another cascade on rising ground at some distance in the garden, which seems to compose one piece of water with this, and has a very agreeable effect.

The garden-front of the house opens upon a large parterre of flowers, bounded on the right with a covered walk of trees on a terras above the parterre. The gardens are large, partly on plain ground but chiefly on the side of a hill, consisting of grass walks and alleys cut through woods or wilderness work. From the several openings you have delightful views of the country below, viz. the Seine, villages and the town of Vernon. The disposition of the whole was in a taste somewhat superior to what one commonly meets with in France, as the genius of that country seems not to lie either for good gardening or architecture; though the defect with regard to the former of these articles must be partly charged upon their want of proper materials, as you will readily allow when you are informed that there is scarcely any gravel in this country.

Somewhat more than two leagues from hence brought us into the Isle of France, and after about four more we arrived at Mante, where we lodged, being Saturday night. Next morning, after crossing the Seine over a fine stone bridge of thirty-nine arches, we passed through a spot of land the beauties of which for three leagues together defy all description. Beyond the Seine, which forms a large bend all the way from Mante to Meulan, the country opens at several distances in gently rising hills planted with vineyards and adorned with towns, gentlemen's seats and convents. Nor is it less beautiful on the left, only as it rises (though by an easy ascent) immediately from the road the prospect on that side is necessarily more contracted.

At Meulan, which terminated our first stage, having breakfasted and dressed, we went to see a little island near the town which truly answers its name, viz. L'Isle-Belle. It is wholly occupied with the pleasant house and gardens of M. Bignon, nephew to the late Abbé Bignon, a man of the first rank among the *literati* of France. This spot lies in the middle of the Seine from north-east to south-west, as near as I could guess about three-quarters of a mile in length and about one-fifth of that space in breadth. The house stands on the north branch of the river, and consists of three pavilions, the whole being about 200 feet in front. The apartments are very lightsome and elegant, entirely in the French way, where everything strikes you with a fluttering, superficial air of gaiety, and but few things will bear a critical examination. Upon this account no country can be better calculated than this is for the amusement of travellers whose time will generally permit them to take only a transient view of what they meet with in foreign parts.

On the back-front is a large parterre reaching from the house to a grand walk which bounds the island, and runs the whole length of it along the south branch of the river. Upon entering upon this parterre, on the left your eye is soon attracted by a long walk, which leads it to a very pleasant summer-house opening full upon the Seine, town and country beyond it. Returning from this building by another walk to the parterre above mentioned, you enter that part of the garden which lies on the right hand, and is of much greater extent than the other. Here first a little grove brought us to a meadow planted with abeilles [*sic*], and to a menagerie on the right; while the left presented us with a little field bearing a crop of wheat, enclosed with a neat-cut hedge, and bordered by a walk, which in this quarter divided the garden into two parts, and somewhat further the island is traversed again by a threefold walk, and after that you come to another cornfield and meadow as before.

Our next stage was to Poissi, by a place called Treil, three leagues. The last league, viz. the space between the two towns above mentioned, lay in a straight line along a fine paved causey, from which we had a view of the forest of St. Germain on rising ground before us.

Poissi is a pretty little bourg on the Seine, where the old kings of France had formerly a noble castle, in which St. Louis was born, whose grandfather, Philip le Bel, began to build here a magnificent abbey for Dominican nuns, and endowed it very liberally, but it was not finished till the time of Philip de Valois, 1330. It was designed for forty young ladies, who were to be of the best families in France, and its present revenues amount to 6,000*l.* per annum; but the ministry sometimes draw considerable sums from these rich foundations by way of loans or free-gifts, which we call in England quartering. The church has some peculiarities, viz. first, the choir is boarded and separated from the church by a grille and a curtain; in the middle of it is interred the heart of Philip le Bel, and over the place stands his bier, covered with a black velvet pall: second, the church is not duly situated with regard to the points of the compass; the reason they give for it is this, that the church being built on the site of the old castle, the high altar was placed on the very spot where the bed stood in which Queen Blanche was delivered of St. Louis. Here we enter the forest of St. Germain, which leads us quite to the town, and is reckoned a league. The road passes only through the skirts of the forest, the main extent of which runs on two leagues to the left hand, being divided into ridings and alleys within a large bend formed by the Seine between Poissi and the place above mentioned.

St. Germain is situated partly on low ground, partly on a rocky hill at the foot of which runs the Seine. It enjoys a pure and healthy air, and is adorned with several good houses built by the nobility while the Court resided here.

The most remarkable thing here is the castle, the first foundation of which was laid by Charles V. as long ago as 1370. The English made themselves masters of it under Charles VI. Charles VII. bought it of an English officer, who was the governor of it. At length Francis I, whose device, viz. a salamander in flames, appears in several parts of it, rebuilt it for a royal palace, in honour of his mistress, Diana of Poitiers. It has since received considerable improvements from his successors, Henry IV. and Louis XIV. It stands on the highest part of the town, and is surrounded by a wall and a deep fosse The three lowermost storeys are of white square stone, well wrought. Then it is encompassed with a balcony of ironwork. Above this are two storeys more on the sides, and three in the pavilions jutting out at each corner, built of small stone plastered over with mortar; the window cases, mouldings, &c., being of brick, appear in their proper colour.

I need not inform you that this was the residence of the late King James and his queen, after that prince had abdicated the English throne. I am told that Louis XIV allowed him a yearly pension of 50,000*l.* sterling for the support of his royal dignity, to be paid monthly; as [*sic*] the present king has continued to show great marks of his liberality to several of the chevalier's adherents, who have enjoyed lodgings in the castle ever since. And surely, if the place of abode could contribute anything towards human happiness, the unfortunate pair above mentioned might have found it in some measure in this delightsome retreat, after they were eased of the troublesome load of a crown. But, by the accounts I have met with abroad, they seem to have carried the seeds of their own misery in their own bosoms, being very uneasy in their domestic establishment during the remainder of their days, which they passed here. So true is Milton's observation :—

> The mind is its own place, and in itself
> Can make a heav'n of hell, a hell of heav'n.

Within this castle there is a very handsome chapel with galleries. Above the altar is a good piece by Poussin, and before it hangs a rich lamp of silver gilt, being the gift of Louis XIII. The priests' vestments, &c., are also very magnificent, having been the presents of several princes for the ornament of this chapel.

Some years ago Louis XV. came to see this place, and was so highly pleased with the situation that he expressed a great inclination and purpose to have it fitted up for his residence. This (you may imagine) struck the inhabitants with a great consternation, but a slight accident quickly dissipated the occasion of their fears. The king, as he made this visit in his return from the chase, being in boots, in descending from the apartments, one of his spurs hit against a step of the stairs, which caused him to fall down. This put him into a passion and made him alter his resolution entirely.

At a small distance from the castle stands a châtelet built by Henry IV. and rendered famous for being the birthplace of Louis XIV. It is a low building consisting of three courts, the first of which is of a circular form and built of white stone, and at present is let out in lodgings. The house is situated on the very brow of the hill, and the gardens descend quite to the Seine, being supported by terraces at a great expense.

Our stage after dinner brought us through a prodigiously beautiful country full of towns, villas, &c., to Paris. Upon my advancing towards this capital, I could not but observe an effect, which is contrary to experience in most other cases, viz. that every object appeared to me with a more agreeable air now than at the first view I had of it formerly, though I had then the same organs of perception, enjoyed the same good state of health, and was some years younger. I could account for this upon no other principle than the natural alliance that subsists between the several faculties of the human soul; whereby it comes to pass that the pleasure which any one sense receives from its own proper object is improved in proportion as the other senses are more or less gratified with the enjoyment of theirs. Thus the sight of the company, the hearing of the music, &c., give an additional relish to the wine and eatables at Ranelagh or Vauxhall. So the impression made upon all the senses in general affects the mind in a degree suitable to its present disposition, whether of complacency or disquietude, from whatever adventitious circumstances that disposition may arise. Upon this hypothesis I could easily give a reason why everything I saw in these parts might affect me with a more lively sensation in my present independent and agreeable situation than when I viewed it in connection with a family, who, being greatly miserable in themselves, were not apt to communicate happiness to those who belonged to them.

After this little philosophical digression, you may imagine you see us lodged en grands seigneurs at our hotel in Rue Columbier, Faubourg St. Germain. Our apartment, consisting of four rooms, stood us in two louis per week. A traiteur provided our dinner at three livres a head, for which he gave us a soup and bouillé, an entré, quelque chose rôtie, and a dessert of fruit. As for our breakfast, every article of it was supplied by a different hand at the following rates, viz. coffee, four dishes, at 16 sous; bread, 1 sou; butter, 5 sous. Our supper was generally (a) roll and butter, or two broad biscuits, at 8 sous, with some fruit, and a bottle of Burgundy at 35 sous. We hired a valet at 30 sous, and a coach at 12 livres a day while in town, and 18 livres when we made excursions into the country.

You will perhaps be surprised that I should enter so little into the description of this great city, upon which my predecessors in tour-writing have enlarged so copiously, but that very reason induces me to contract my account, especially as I have little to add to that which they have already given. Leaving it therefore to the next well-travelled gentleman you shall meet with to entertain you with the amusements of the opera, comedy, gardens of the Tuileries, &c., I shall beg leave to touch upon some other articles more in my way, and which I flatter myself will not be entirely disagreeable to you. The chief of these are the two curious collections of paintings, the one in the Luxembourg Gallery, the other in the Palais Royal. The former of these is the property of the Crown, and contains a series of the most important events which happened during the regency of Marie de' Medici, mother of Louis XIV. It is sufficient to say that they are done in the highest style of that great master, Rubens. But the pleasure with which we view these paintings is greatly alloyed by the melancholy reflection that they are on the bare wall, and consequently liable to the injuries which time and weather may produce in it, and indeed they had suffered in some parts when I saw them; but a friend of mine just returned from Paris tells me they have lately been cleaned, and restored in some measure to their original beauty. The Palais Royal belongs to the Duke of Orleans, and may be called an epitome of all that's most valuable in painting, at least on this side the Alps. It is an immense warehouse or magazine rather than a collection, for it fills most of the apartments of a large palace with some of the best performances of all the best masters in Europe. This treasure was partly purchased by, partly presented to, the late Duke of Orleans, who was Regent of France. As that prince (among his other polite accomplishments) was known to have a high taste for painting, it was natural for those who, either in a public or private capacity, stood in need of his favour, to court it by such presents as would be most acceptable to him in that way, which, considering the extent and continuance of his power, may well account for the largeness and value of this collection.

During my stay here I paid my compliments to M. l'Abbé Sallier, the king's librarian, to whom I was recommended by Mr. Folkes (late) president of the Royal Society in London. He received me with great politeness, and (besides the library) showed us the Salles where the members of the Academy of Inscriptions and Belles-Lettres, as also of that of Science, held their assemblies, being two fine rooms in the old Louvre. In the former of the Salles were two grand paintings by Cuypel, one of which represented the founding of the Academy by Louis XIV. The latter was adorned with the portraits of persons of the highest note for learning and genius, who had belonged to that institution. We were afterwards conducted to the Academies of Sculpture and Painting, which were likewise embellished with the works of such French masters as were allowed to excel in those arts. But our attention was particularly engaged by a fine marble statue done by Bouchardin. It was a Cupid gently bending to form a bow out of Hercules's.

ROCHFORD, ESSEX.*

THE town of Rochford, which gives its name to one of the nineteen hundreds into which the county of Essex is divided, does not possess sufficient interest to make it worthy of your special notice. There are the usual houses suited to all degrees to be found in a country town; the doctor, solicitor and select inhabitants are quite content with its position cleanliness and neatness. The houses have been altered and old features obliterated to meet their requirements, and a grand bank is prepared to do its very large share of the local business; but the smaller houses and cottages remain in almost the same condition as when built, except for the lapse of years, and still meet the requirements of 200 years ago.

There was formerly a market building in the centre of the town, the site of which is now added to a space which forms a large empty square. Some of the streets are by no means well planned, and are far from being straight, but that we will take as a surer indication of the town's antiquity and early origin. I make these remarks not because I have any desire to depreciate the town, for I feel sure that had we sufficient time to spare we should soon have occupation enough in exploring the ins and outs, finding many archæological details which would form what I may call for the want of a better word a lazy ramble; but to-day we are out to discover just as much as we can in one or two buildings, and the most prominent of the objects to be found therein; for that reason I at once felt I had better conduct you to the church which is the nearest—for of all buildings, with perhaps one exception, that of home, the church creates the greatest point of interest to all men, even in the meanest town or village.

There was in existence in Rochford an old custom called the "Whispering or Lawless Court," held in a field just outside to the east of the town. On the Wednesday next after Michaelmas Day, at cock-crowing, the steward and tenants on the manor assembled by torchlight round a post on King's Hill. The court was then opened in a whisper, and the tenants answered to their names in the same manner, the fine within an hour being double their rent if absent. The records are made with a piece of coal instead of pen and ink. I was informed that the court when last held formed and became a great source of amusement to the boys.

The very interesting church of Rochford, dedicated to St. Andrew, stands outside the town, quite half a mile from its centre, and is built like so many others in the adjacent towns of this county in various well-defined periods of architecture and of varying materials. These materials were in some examples quite as definite; for instance, we find the earlier portion of the church built of stone, which was in all probability brought out of Kent, and used for the main walls, whilst the dressings, such as shafts and mouldings, were worked in Caen stone, both for piers, windows and doorways, the county of Essex being deficient of building stone. These materials, although not to be obtained in the neighbourhood, could easily be procured, shipped and landed on the wharves or banks of the many indentations of the coast formed by the small rivers and their smaller tributaries, such as we find on the Crouch and its tributary, the Roach, upon the banks of which Rochford itself stands. The materials most common to hand were clunch, a soft stone, and flint. No doubt these rivers at the earlier periods of building afforded much better landing-places than they do now, and were to a greater extent washed and influenced by the waters of the English Channel, making a sea or coast voyage an easy method of conveyance. At a much later period came the art of brickmaking, for which the surrounding soil is most suitable; thus we find many additions to churches, especially in Tudor days, carried out in this newer material, beside many examples subsequent to the Reformation, and very frequently near those low-lying coasts, such as we find in Essex, where building had been determined upon. Large importations were also made from Holland, just as some two hundred years later we, amongst others, exported bricks in still larger numbers to America for building Boston and other towns. I find in a note on materials I made for some other purpose that in the rebuilding or strengthening of Hadleigh Castle for Edward III, Henry de Mammesfield being clerk of works, 1,500 Flanders tiles at 10*d.* the 1,000 were used.

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* A paper read by Mr. H. G. Quartermain, member of the Society of Architects, before the members of the Upper Norwood Athenæum at Southend.

In the example of Rochford Church we have the chancel and nave, with north and south aisles, built, as far as we are now able to judge, in the Decorated and Perpendicular periods; some Decorated windows with flowing tracery, a good clerestory to nave, the entrance opening showing former position of rood-loft, a chapel to the south with piscina and a good south porch, all of which we find built in stone, together with the remains of a squint or hagioscope; whether there formerly was a tower standing on the site of the present one we have no evidence, but what we have in the latest work is a very fine red brick tower with stone dressings, the walls being covered with diaper work, the patterns formed with dark bricks.

This tower was built in the Tudor period of about Henry VII.'s time, and attributed to Thomas Botelar, Earl of Ormond, whose arms, viz. or, a chief dancette azure, are on the west wall over the entrance door. The coat-of-arms will, I think, be sufficient evidence to prove the founder. It is a very fine example of a church tower and equally fine specimen of brickwork; the bricks themselves are of the usual small size with wide mortar joints, and the moulded work to piers and arch opening into church is of a pleasing and effective character in its lights and shades. The walls are of great thickness (about 6 feet), and without question its artistic qualities and the substantial manner of building are well worth study. For my own part I would rather not have had the small stone dressings outside, such as weatherings to the buttresses, &c., which to my mind somewhat spoil the harmony of rich colour and look paltry, but that does not detract from the very fine general effect of composition, outline and dignity this tower possesses. Leaving the question an open one as to whether the bricks were native or imported, I may venture to remind you that at Rayleigh, a few miles inland as the crow flies westward, there is a fine south porch, with embattled parapet over, built of exactly similar material in the same Tudor period. Then, again, we have a brick-built south porch at the charming little church of Eastwood, another of larger size at Leigh-on-the-Hill, near the estuary of the Thames. In other churches many other details, such as brick windows with mullions and tracery entirely cut and moulded out of what must have become a ready-to-hand and popular material; such examples you will find at North Benfleet and at Ashingdon churches. The church at Ashingdon stands on a steep hill, and it was thereabouts that the great battle of Assundun was fought in 1016 between Canute and Edmund Ironside, in which the former obtained the victory (*vide* Freeman's "History of the Norman Conquest"). Before dismissing our subject (Rochford Church) I may mention that there is but one brass remaining, dated 1544—a small one—the inscription on which, giving offence in Puritan times, was defaced, but not a fragment of the large quantity of painted glass known to have existed. It is said that the church was much used for storage of smuggled goods, especially the three-decked pulpit. This, I am afraid, is a bit of scandal often applied to churches near the coast.

I need not enlarge on the general use and favour brick as a building material obtained in the erection of stately houses in this county; it will suffice to mention Eastbury House, near Barking, and Layer Marney Towers. Perhaps I ought in passing to remind you that Mr. Stock had the great pleasure of conducting the Society some few years ago to the latter very fine mansion, but whether or not he then showed the church, which is also a good example of the same material and period, I do not know.

Some consideration and rambling is necessary before we comprehend and realise the influence the then new red brick material had upon our artistic builders, and the immediate and willing use they made of it. We can all now quickly appreciate the glowing colours of brick, with the varying tints of lichen, moss, ivy and flowering plants growing upon it, and I think we often have to thank those old builders for contributing so much to the pleasures of our modern eyes. It was after many, many years, seeing such combination of colour, that Laurence Sterne wrote, "Blessed is the man who buildeth a red-brick house."

Well, we have another example of a red brick house. Just across the green, outside the church wall, stands Rochford Hall. Unfortunately, we see its outline in turrets, gables and lofty chimney-shafts, but the beauty of its eyes, its windows, are all gone; its face is smeared and plastered over, and we look upon only a wreck, which is but the true indication of its poverty within. There is nothing remaining of interest in any of its rooms, and only in a winding oak stair, or an untouched turret chamber, that a trace of its original features can be found, fire and poverty causing much of the misfortune in the evil days through which it has for some generations passed.

Authorities tell us that Rochford was successively the seat of the Lord Rochford temp. Henry II., the Botelers or Butlers, Earls of Ormond and Wilts the Boleyns or Bullens, and then of Sir Richard Rich, who built Leez Priory near Chelmsford (the site for which he obtained in 1537) as his principal seat. Here he was visited by Edward VI., and the Hall was lent for a time to Princess Mary. About a hundred years after it passed from Mary Countess of Warwick to her husband's relations, the Montagues. Sir Richard Rich's son Robert was created Earl of Warwick by James I. in 1618, and what was once Lord Rich's town house stands in Cloth Fair on the north side of the church of St. Bartholomew the Great, Smithfield, his coat-of-arms being outside on the first floor between two windows of one of those old houses, with overhanging storeys, still to be found there, although much altered to suit modern purposes. The arms are gules, a chevron between three cross croslets, and were probably put up before 1620. He died in March 1620. He was the founder of an almshouse for six poor people of Rochford, and in his will declares that "according to the intention of his father and grandfather, he had built a mansion and a place convenient for certain poor almsmen and poor people for ever, viz.:—Six poor people of which five shall be aged, poor, lame or impotent, and such as have lived painfully and orderly and shall, by age or otherwise by the hand of God, become unable to live of themselves; and the sixth to be an ancient and poor woman fit and able to attend and keep the others as well in sickness as in health; and each to have twenty shillings and eightpence yearly against Xmas and a gown for their wearing."

Thomas Boleyn, son of Sir William Boleyn, was created Earl of Ormond and Wilts, and afterwards Viscount Rochford by Henry VIII., and his daughter Anne was mother of Queen Elizabeth.

That Rochford Hall was at some time in its history occupied by the Boleyn family is beyond a doubt. The unfortunate Anne Boleyn is said to have been born there, but that she in after years spent some time therein must remain uncertain. We know that it was at Hever Castle that Henry VIII. is believed to have paid court to her, but if on the other hand the legend is based on fact, it must have been in the earlier part of her life, long before she had met his most sacred majesty, her most generous lover, our much to be admired English Ahab, by divine right king of England, lord of France, defender of the faith, &c.

It is related of Anne in Houssaie's "Memoirs" that the executioner employed was a Frenchman selected for his great skill. She being on the scaffold would not consent to have her eyes covered, saying she had no fear of death. All that the cleric who was with her could obtain her consent to was that she would shut her eyes, but as she opened them again and again, their tender and appealing glances unnerved the executioner, who was fearful of missing his aim, but ultimately taking off his shoes he approached on one side, whilst a noisy helper drew attention to himself on the other.

Just outside the churchyard wall is a footpath, crossing by a plank a little deep-laid stream, over which we proceed, thinking the while of the rustic poet's words:—

> Fled now the sullen murmurs of the North,
> The splendid raiment of the Spring peeps forth;
> Her universal green, and the clear sky,
> Delight still more and more the gazing eye.
> Wide o'er the fields, in rising moisture strong,
> Shoots up the simple flower, or creeps along
> The mellow'd soil; imbibing fairer hues,
> While health impregnates every breeze that blows.
>
> BLOOMFIELD.

Walking through such refreshed and refreshing green fields, tracing here and there the little sources of the Roach, admiring the tender hues of sky and meadow, weary men as we are, cheered and delighted with the song of the lark, the thrush and nightingale, we come to Eastwood, which was formerly a chapelry, but was made a parish in the thirteenth century. The manor was at one time held by the famous Hubert de Burgh, Earl of Kent, who built Hadleigh Castle, temp. Henry III. He was a statesman, lawyer, naval and military commander and military architect. The manor of Eastwood was in the twelfth century held by the Earls of Essex, in the thirteenth by Robt. de Eastwood; it was as above stated held by Hubert de Burgh, Earl of Kent, again in the fourteenth century De Bohun Earl of Northampton, and in the fifteenth century Alberic de Vere, Earl of Oxford, in the sixteenth the Duke of York, and afterwards Richard Lord Rich, Earl of Warwick and Nottingham, who sold it to a commoner, Robert Bristowe. The church dedicated to St Laurence and All Saints is of Norman foundation. This is chiefly shown in the north wall of nave, where there are still the remains of three windows, the centre one being almost perfect; on the south side there are slight traces of one only, perhaps also in the lower courses of the stonework of its tower, which is placed at the west end of south aisle. The south and north doors have entirely lost their original character, they being now square-headed, but were probably built at the time when the south wall was erected, which is EE. The north Norman wall was also pierced at a very early period for a north aisle. At a later period the continuity of building is shown in the south arcade, which, together with the chancel arch, is of very Early English type of good character, and proceeded onwards through the Decorated and Perpendicular styles, the works ending with the erection of the brick-built south porch.

The church consists of nave, north and south aisles and Decorated chancel; there is an Early English arched opening through the east wall of tower; the walls of bellchamber, which have been raised in woodwork, are roofed with a wooden spire very usual to churches in the neighbourhood. We find the same form with but slight variety of outline in the church at Shenfield we visited a season or two ago, and I could easily enumerate several within a day's ramble, such as Hadleigh, Hawkswell, Thundersley, Southchurch, Hockley, &c, besides many others where the spires are set upon higher stone towers, such as Barling, Great Stamborough and Little Wakering; the wooden spire is quite a feature in Essex churches. At Hockley are still the remains of a spa and its pump-house, which unfortunately did not rival Bath.

But to return to Eastwood, we must notice the very fine hammered ironwork to the square-headed doors of both south and north porches. This is of an earlier date than that of the doorways. The present square-headed openings I believe to be of recent construction. Upon the ironwork of the south door will be found the remains of an inscription in Lombardic or uncial letters, incised on some of the strap work. As far as can now be ascertained, the Latin words being very indistinct, the words may be roughly translated as "Peace be to those entering, and may peace guide those departing" ("Pax regat intrantes. Eadem regat egredentes"). As we pass the font we notice its unusual size and form. It belongs to the transitional period of Norman to Early English, this being well indicated in the slightly raised pointed arcading with slender shafts and bases round the drum, which itself is placed upon a massive stone base. This arcading is very similar to that we find on many Norman fonts, but the evidence of similar work in tower arch and arcading to south aisle is in favour of the font being Early English also. It still retains its original lead lining.

We find a rather remarkable squint cut in the north-east wall of the south aisle, the opening for which has been roughly enlarged, and we notice that the first and second columns are roughly cut, one on the outside, the other on the inside, to give another view of the altar for the bellringer. There are three bells in the tower, two of them being inscribed, one "Sancte Gregori, ora pro nobis," and the other "Sancta Katerina, ora pro nobis"; the third is dated 1693. But the most unusual and noticeable feature of the church is in the north west corner. This consists of an oak-framed enclosure; some parts of the framing are flat moulded. It has a narrow Tudor-headed door opening, with massive door hung with stout hinges, and with a moulded and embattled beam over, the framing being filled in with boards, the edges of which are reduced in thickness to fill the grooves in framing; above is another chamber approached with trap-door and step-ladder. The whole may have been the residence of a priest in charge of the church, or of an anchorite, who had devoted his whole life to some particular service in the church. There is but one narrow light divided in the height to serve the two apartments; the garrets, however, are widely splayed inside. We frequently find very massive oak constructions in Essex churches, and both at Rayleigh and Shenfield oak columns with arches to south aisles, but as far as my experience goes, no enclosure such as this. The timber work of nave roof is very interesting with massive tie beams supporting king posts, nicely moulded, and with curved pieces springing as supports from post to roof.

You have perhaps noticed that there is no pulpit, but in 1853 a writer noticed it, though he does not describe it. The font cover is also lost; that is said to have been decorated with wrought ironwork.

There is an interesting oak credence table of Jacobin work, and there is, in the chancel floor, a brass to a yeoman, one Thomas Burrough, date 1600, but no old painted glass.

Amongst the many clerics who have served the church we find none of sufficient repute to be now mentioned, except for the Brothers Purchas. Samuel Purchas, who was the eldest son of Samuel Purchas, of St. Martin's, Ludgate Hill, "an English divine of great learning," was here, and proved himself an able man and learned writer also; he was author, amongst other works, of "The Pilgrims." There is a slight record of him carved on some Jacobean pewing; his name and the date only, "Samuel Purchas, 1647," now in the porch of Sutton Church near by, and in this churchyard is a tomb to his brother Thomas, who succeeded him as vicar.

An old farmhouse of red brick with shaped gables of William III.'s time, now called "The Lodge," is situate in this parish. Many of the other houses, excepting the vicarage, are built in the style of the old Dutch half-brick, half-boarded cottages of the type introduced by Coppenburgh, about 1623, and his fellow-countrymen at the time, when having obtained some concessions they converted the low-lying area known as Canvey Island, opposite Benfleet, by dykes and drainage, into a fertile and rich pasture land.

It is not my intention, gentlemen, to weary you with any description of Thundersley—of its church, or distant views almost equal to those of the South Downs, or of Hadleigh, with its early semicircular eastern end, or of its castle and its former owner and builder, De Burgh—neither do I wish to say anything of Benfleet or Leigh, except these few words. It would be a happy thing for this Society if someone else more capable than myself would undertake to work out a route for you, a time in which to spend a few hours wherein the views alone would amply repay the journey, and the pleasure you would obtain from those humble buildings and rustic associations will be, I think, in happy contrast to the lordly halls and stately mansions we have been so fortunate to go over. In conclusion, therefore, I will express that we may often escape thus:—

> From the town
> Buried in smoke, . . .
> Oft let me wander o'er the dewy fields,
> Where freshness breathes, and dash the trembling drops
> From the bent bush, as thro' the verdant maze
> Of sweet-briar hedges I pursue my walk;
>
> . . . .
>
> And see the country, far diffused around,
> One boundless blush, one white-empurpled shower
> Of mingled blossoms.—THOMSON'S "Spring."

THE HELLENIC SOCIETY.

THE annual meeting of the Hellenic Society was held on the 5th inst. under the presidency of Sir Richard Jebb, M.P.

The secretary, Mr. George A. Macmillan, read the report of the Council, which stated that the session had not been specially eventful, but the work of the Society in various departments had been steadily carried on. Five general meetings of the Society had been held. On two occasions, (1) when Mr. J. L. Myres read a paper on the Homeric House, and (2) at a special meeting when Professor Waldstein read a paper on the Hera of Polycleitus, lantern-slide illustrations were used with excellent effect. In the matter of publication, the latest issue had been that of the late Dr. Middleton's "Plans and Drawings of Athenian Buildings," which appeared in the spring of the present year as "Supplementary Paper No. 3" As explained in the preface by Professor Ernest Gardner, who edited the volume, Professor Middleton had at the time of his death begun to work upon the topography of Athens, with a view to producing a book similar to his well-known work on ancient Rome. Unhappily he did not live to do more than complete a considerable portion of the plans and drawings, and no continuous text had been prepared. Under these circumstances, Dr. Middleton's executors, anxious to prevent the loss of so much valuable material, offered them to the Hellenic Society for publication. After due consideration the offer was accepted, and on Mrs. Middleton's generously undertaking to contribute to the cost of production, the matter was put in hand. It was thought best, after a selection had been made by the editors of the most valuable parts of the material, to have the plans and drawings revised on the spot by a competent architect; and, fortunately, Mr. T. D. Atkinson, who was acting during the session 1898-99 as architect to the British School at

Athens, was able to undertake the task. In consequence of the appearance of this valuable monograph, the volume of the Journal for 1900 will consist of only a single part, which is now just ready for publication. During the year 1901 it is hoped to issue another volume of Supplementary Papers containing the complete record of the very important excavations carried out by the members of the British School at Athens upon the site of Phylakopi, in the island of Melos. It is well known that these excavations revealed the existence of a primitive city comparable to those of Tiryns and Hissarlik, so that the proposed volume will constitute a very valuable contribution to the study of prehistoric archæology. As reference had been made to the British School at Athens, members would be glad to hear that Mr. Hogarth, the director of the school, had during the current session made a most successful beginning of excavations in the island of Crete. The discoveries made already on the site of Knossos by Mr. Hogarth and by Mr. Arthur Evans, who is working under the auspices of the Cretan Exploration Fund, and more recently in the Dictæan cave by Mr. Hogarth, were of such a character as to promise a rich harvest in future if sufficient funds could be provided. In another field of work the Council had an announcement to make which they believed would be received with general satisfaction among scholars. In the spring of the present year a proposal reached the president of the Society from Professor John Williams White, president of the Archæological Institute of America, to the effect that the two bodies should co-operate in producing a facsimile of the "Codex Ravennas" of Aristophanes. The proposal was welcomed by the Council, and Professor White, who was then in Italy, was asked to obtain estimates of cost. It was, however, suggested by certain scholars in this country who had paid special attention to the text of Aristophanes that it might perhaps be better to reproduce the "Codex Venetus," on the ground that the scholia are on the whole more important, and at the same time less accessible, those in the "Ravennas" having been fully transcribed and published. Estimates having shown that it would be possible to produce the facsimile now at considerably less cost than when it was last under consideration, the Council felt no hesitation in agreeing to co-operate with the American Archæological Institute on the basis of equally divided responsibility. Formal permission for the reproduction has been obtained from the Italian Government. The matter has been entrusted to a committee representing the two societies, and a circular will shortly be issued inviting subscribers to the work at the price of 6*l.* After dealing with the library and the photographic collection, the report stated that the ordinary receipts during the year were 961*l.*, against 820*l.* during the financial year 1898-99. The receipts from subscriptions, including arrears, amount to 644*l.*, against 616*l.*, and receipts from libraries and for the purchase of back volumes 163*l.*, against 122*l.* Life subscriptions amounting to 63*l.* have also been received. Other items of ordinary income show no change. The ordinary expenditure for the year amounts to 691*l.*, as against 810*l*, and the balance carried forward was 131*l.*, as against 61*l.* last year.

The President, in moving the adoption of the report, said the year had been marked by several events of interest in relation to Hellenic studies. At Phylakopi the British School had been completing its excavations, and the results would shortly be published in a special supplement to the "Journal of Hellenic Studies." The British Museum had published the volume describing the excavations at various sites in Cyprus, of which the most important was Eukomi. The Germans had been digging at Miletus. They had followed up a street which led to the city wall, from a point where the remains of the old road to Didyma could still be seen. They had traced the course of the city wall, which belonged mostly to the Hellenistic age. They had also cleared a group of buildings consisting of a theatre with a large court attached to it. About 190 inscriptions had been found. One of these, which belonged to the beginning of the fourth century B.C., related to a legal dispute between Miletus and Myus. The Austrians had, meanwhile, been conducting excavations at Ephesus. The principal result had been to establish the history of the theatre. A detailed account of this building would appear in a special publication. The earliest remains of the theatre appeared to be referable to the time of the foundation by Lysimachus. Austrian excavators had also found some additional fragments of a great inscription, that known as the "Salutaris" inscription, the greater part of which was in the British Museum, and they had generously presented these new fragments to the trustees of the Museum. Near the harbour of Ephesus the Austrians had discovered some fine buildings of the earlier Hellenistic period. Since nothing that concerned early Rome could be alien to the interests of the Society, it was not irrelevant to mention among the finds of the year the inscribed stone which had been unearthed in the Roman Forum. It was indisputably the oldest of Roman lapidary inscriptions. The sense was still uncertain, but the words "rex" and "kolator" might be regarded as proving that it referred to some sacral matter. In the most recent literature of Hellenic studies mention was due to Professor Furtwängler's great work on ancient gems. It gave a practically complete collection of extant examples, with upwards of sixty photographic plates. The most interesting and important result of the year in the field of early Hellenic archæology was represented by the discoveries made by Mr. Arthur Evans in Crete, but of these an account would be given by Mr. Evans himself. The President concluded by moving the adoption of the report.

Sir William Richmond, in seconding the resolution, said that a gentleman had given him 250*l.* for the work in Crete, and if the Society would pay for his journeys there and back he would gladly go himself to Crete to take copies of the wall paintings and to do his best to preserve what remained.

The report was adopted.

Mr. Arthur Evans said more than twenty years ago Mr. Stillman had discovered a wall at Knossos and wished to continue excavations, but received no encouragement in Crete. But he found some pots of the Mycenæan period. Schliemann also visited the island with Dörpfeld, but found similar obstacles. Six years ago he went himself and found evidence in prehistoric times of a script which though not strictly alphabetical showed a familiarity with some sort of writing. Last year a fund for exploration in Crete was started, but only a small amount was raised. Mr. Hogarth, who was with him, had done good work. Mr. Evans then described in detail the excavations of a large palace—including the propylæa. Digging down seven metres he came to traces of neolithic deposits and it seemed that there was a great superimposition of the works of a much later civilisation. In a succession of large magazines great jars resting on pavements were discovered. Underneath were two stone cists lined with lead at two depths. He was thus led to the conclusion that treasures would be discovered at a still greater depth. There were traces of a great catastrophe at an early age. The whole site—though at the time of the destruction the buildings were plundered—had from that time been left undisturbed. The most interesting part was at the north-east, where frescoes were discovered as fresh as those of Pompeii, from which, however, they were separated by about fourteen centuries. Here there was what might have been a council chamber or throne room of, perhaps, unparalleled antiquity. On other walls were frescoes of flowers, water plants, running water and fishes. A series of small chambers may have been the harem of the palace, which contained multitudes of figures—of ladies among them in costume which the director of the French school described as almost Parisian. These were quite new in Hellenic art and seemed to confirm the Homeric statement of the great population of Crete. There was also a part of a Mycenæan shrine—with fresh colouring—like one discovered by Schliemann. Beyond these rooms were the northern propylæa with the remains of a great bull, of which the head and large part of the body were brought out—suggesting the Minotaur. A large deposit of tablets showed the early Mycenæan script. This script seemed to contain about seventy different characters, answering rather, perhaps, to a syllabary than to an alphabet. Other tablets of a different and more developed writing were also found. These were more pictorial and hieroglyphic, and identical with seals which he had previously discovered. Thus there seemed to have been two systems of writing belonging possibly to two different races. Some clay seal impressions, some of them of beautiful Mycenæan gems, were among the most interesting things he found. There were, in a word, evidences of a very high civilisation. Other artistic remains disclosed a picturesque style not hitherto associated with that remote period. Funds were needed, and he was glad to hear Sir William Richmond's announcement; he had had to bear the brunt himself, and would be thankful for help.

On the motion of the President a hearty vote of thanks was passed to Mr. Evans.

THE LATE SIR THOMAS FARRELL, P.R.H.A.

THE public will learn with sincere regret and with feelings of astonishment, says the *Irish Times*, of the death and interment of the distinguished President of the Royal Hibernian Academy. It seems an extraordinary thing that so illustrious an Irishman and artist should have passed away and be consigned to his last resting-place without the slightest indication of the sad event having appeared in the public press. That this has occurred was due to a wish expressed by the deceased sculptor that the news of his demise should be withheld as a secret, and thus it has come to pass that four days after his death and two days after his burial the first intelligence of his passing hence is announced in a daily journal published in the city of his birth, and within a short distance of his residence, where he died. Sir Thomas Farrell was the successor of Foley and Hogan; he maintained after these pre-eminent masters the best traditions of the Irish school of sculpture, and his death leaves a gap which, at the moment, we fail to see how it can possibly be filled. His career was a most remarkable one. Himself one of the most retiring of men, he was urged by the sheer pressure of his talent to the highest position that an Irish artist can fill in his own land. He adorned his native city with some of its most exquisite artistic ornaments, which will stand for all time in our midst as monuments as much of the great genius who carved them, as of the famous personages whom they represent. There was one unique feature in the accomplishments of Farrell—he was equally successful in relief, in bust work and in statuary.

Born in Dublin in 1829, he was the son of Terence Farrell, a Royal Hibernian academician, and, reared in an atmosphere impregnated with artistic instincts, his brothers and he followed the profession of their father. His early days were passed in a time when the fine arts were more generously patronised in Ireland than unfortunately they are at present, and shortly after he became an exhibitor his work came into great request, with the result that his income must have been very large, and he was very frequently commanded to execute important public commissions. One of the first works that made him prominent was the magnificent bas-relief representing the last charge at Waterloo, designed for the Wellington Column in the Phœnix Park. His work was accepted after public competition, and has always been regarded as the glory of the great national memorial to the greatest of Irish soldiers. The action of the horses as they seem to spring from the bronze, the energy of the men, and the atmosphere of bloody war which he succeeded in transmitting to his cold and lifeless material are a revelation in relief work. He was never afterwards seen to more magnificent advantage, and in a city rich in artistic treasures there is nothing that claims more of the admiration of the lovers of the fine arts. Another of his early works, which clearly revealed uncommon genius, was his memorial to Captain Boyd in the cathedral of St. Patrick, the figure of which, with its spirit of athleticism and courage, can compete with anything of the kind with which we are familiar.

His statue of Smith O'Brien standing at the head of D'Olier Street is another piece of sculpture which places him high in the foremost ranks of his splendid profession. Never before and never since have the unpicturesque modern frock coat and trousers had imparted to them so great a degree of grace and attractiveness. The statue is one of the glories of the city, worthy of its contiguity to the masterpieces of Foley. The presentments of Sir John Gray in Sackville Street, of Cardinal Cullen in the pro-Cathedral, of Archbishop M'Hale in the Square at Tuam, of Bishop Butler in Limerick, the seated figures of Sir Alexander M'Donald in front of the Central Model Schools and of Lord Ardilaun in St. Stephen's Green Park, the full-length figure of Lord O'Hagan and of Richard Lalor Sheil, if we mistake not, in the Hall of the Four Courts, Sir Benjamin Lee Guinness facing Patrick's Close, Sir Robert Stewart, the famous Irish musician, in Leinster Lawn, Denis Florence M'Carthy, the poet, at Blackrock College, are a few of the immortal works which he chiselled. He was also the creator of the statues of Archbishop Whately and Archbishop Murray, and of the Irish actor, Barry Sullivan, in Glasnevin Cemetery. His recumbent figure of Cardinal M'Cabe over that illustrious Churchman's grave at Glasnevin is one of the finest of its kind to be seen almost anywhere, and the busts from his studio, which must have been extraordinarily numerous, include those of Mr. Thomas Sexton in the City Hall, Sir Patrick Keenan at Tyrone House, and Father Reiffe at Blackrock College.

On the death of Sir Thomas Jones in 1893 Farrell was elected president of the Royal Hibernian Academy, and the following year he received the honour of knighthood. In that exalted position he made strenuous efforts to secure an increased Government grant for instruction in draughtsmanship and painting in Ireland, but he failed to obtain more than the small sum of 300*l*. annually voted. Sir Thomas was a constant exhibitor at the Royal Hibernian Academy. At the last exhibition he showed a beautiful gilt group representing Rescue, but he was less successful in the imaginative than in the realistic branches of his art. The chief and characteristic features of his best work were strength of outline, command over facial expression, and grace of pose. There is no Irish sculptor remaining who can fill his shoes at the moment, and it is inevitable that the presidency of the Academy must again pass to a painter. In private life Sir Thomas was essentially a retiring man. Diffident to an extraordinary degree, he never seemed satisfied with his finished work, and it is related that on one occasion at the moment of the unveiling of one of his most important pieces he rushed from the building lest the result of his labours might appear to him unsatisfactory. He never married, and may be said to have lived entirely with his work and his art, but by those who knew him intimately he was greatly beloved. His memory will remain green amongst Irishmen so long as his masterpieces stand in our midst, and his achievements will ever remain in conjunction with those of Foley and Hogan, Barry and Maclise, as a magnificent demonstration of the artistic instinct and capacity of Irishmen.

NORTHERN ARCHITECTURAL ASSOCIATION.

THE annual excursion of the Northern Architectural Association was held on Saturday last. The party travelled by the 9.30 A.M. train from Newcastle, arriving at Leyburn at 11.36. The following members were present, and lunched at the Bolton Arms Hotel:—Messrs. W. Glover (president), Newcastle; F. Caws (vice-president), Sunderland; H. G. Badenoch, J. Bruce, H. C. Charlewood, J. W. Dyson, C. S. Errington, J. Oswald, A. B. Plummer, W. Sheriff, W. R. Story and C. Walker, Newcastle; G. T. Brown, Sunderland; G. Brumell, Morpeth; J. A. Lofthouse, Middlesbrough. After lunch the party drove to Spennithorne, where the rector kindly conducted them over the church. They then proceeded to Jervaulx and Middleham. At Jervaulx the extensive ruins were minutely inspected and numerous photographs and sketches were taken. At Middleham the rector explained the principal points of interest in connection with the castle and church. After dining together in the evening the party left Leyburn at 7.28 P.M. At Northallerton an hour was spent on the return journey, and the church was visited.

TESSERÆ.

John Bacon's "Pointer."

IN sculpture there is a subordinate art—that of transferring the express image of the model to marble—and this is commonly accomplished by means of a measuring instrument technically called a pointing machine. The one which Bacon found in use when he commenced his profession was a clumsy thing called, from its shape, the gallows. This bestrode the model—a pen dropped through a groove to the surface of the figure, which on removing to the marble denoted the quantity of material to be cleared away. The objections to this instrument were twofold; it could only take measurements in one direction and on one side, and both model and marble required to be turned—a delicate experiment—before the whole could be rough-hewn. Bacon invented an instrument of a very superior kind. It is enough to say that with his machine one can point the statue standing upright—that the arm, as it may be called, which takes the measurements reaches all round, and by means of a ball and socket-joint the measuring pen can be directed according as the model requires. The merits of this valuable invention made it a favourite in France and other countries, and though far eclipsed for accuracy and rapidity by the new instruments of Chantrey, it still continues in very general use. Houdon, the eminent French sculptor, on visiting London saw this instrument for the first time in Bacon's study, and expressed himself so strongly concerning its beauty and its usefulness that the inventor made him a present of one. Some time afterwards a gentleman who had come through Paris called on Bacon, and, observing his machine, exclaimed in surprise, "So you have got Monsieur Houdon's instrument for taking points; I see you don't object to copying the French in some particulars." An explanation took place, when it appeared that Houdon had passed it off for an invention of his own. When Chantrey got his new instrument he was so pleased with it that he caused correct working drawings to be prepared and sent in a present to Canova. The illustrious Italian acknowledged the benefit which such an instrument would confer on art, but lamented that he could not find a head in Rome mechanical enough to comprehend the drawings.

Alonso Cano.

The renowned Spanish artist, Alonso Cano, was born in Granada in 1601. He was architect, sculptor and painter. His father was a carver. Entered young as a pupil to the painter Castillo, his predilections tended to the pursuit of his father; from studying some statues in his early days at Seville he imbibed a genuine feeling for the antique, and afterwards, like Michel Angelo, when wearied with the brush, he refreshed himself with his chisel: espiritu al leño, vida al lino. Having wounded the painter Valdez in a duel, he fled in 1637 to Madrid, where in 1644 his wife was found murdered, his house robbed and his confidential servant missing. Palomino asserts that Cano was the real criminal, and that he endured torture without confession; but for this story no tittle of evidence exists, nor would Philip IV, eight years afterwards, have conferred on a reputed murderer a stall at Granada, with this remark to the Chapter, who complained of the artist's want of education—"How do you know, had he been a learned man, that I should not have named him Archbishop of Toledo?

Go to; I can make a canon at pleasure, but God alone can create a Cano." Undoubtedly a degree of eccentricity incident to genius fell to Alonso's share; but however hasty, impulsive, and above common rules, he was full of kindness. His gains were given away in charity, and when moneyless, drawings were substituted which the poor sold to amateurs. Many yet exist known to have been made for such purposes—done with a neat pen and tinted with liquorice. However liberal of his works to the necessitous, he knew well their value when treating with the rich. Thus when a stingy Chancery lawyer haggled about the price of a rapidly finished *St. Anthony*, Cano smashed it to pieces (as Salvator Rosa did a picture before a paltry Principe of Rome), exclaiming, "Understand that I have been fifty years learning to carve that little figure in twenty-five days." Although well patronised and paid, yet he was so poor that his death-bed expenses were defrayed by the Chapter. His Spanish loathing of a Jew was such that he refused when dying to confess to a curate who had attended some of these "circumcised dogs," and another ruling passion being also strong in death, he put aside a crucifix brought to his lips because badly carved. According to Cean, Cano drew like the Florentines and coloured like the Venetians: a critique more epigrammatic than accurate. His real characteristics as a painter were simplicity of composition, a melancholy pensive tenderness and devotional sentiment. Having never quitted Spain, in him the native element welled up; he carried out the taste of the people, and gifted with a power of assimilation (so closely allied to originality) of extracting honey from weeds, took subjects from popular prints, telling those who called him a plagiarist "to go and do likewise, and as well if they could." This predaceous principle, practised largely on Spaniards by Mons. Le Sage, was long ago justified by the Spaniard Seneca —"Quidquid bene est dictum ab ullo meum est" (Ep. xvi.), or, in the words of Molière, another tolerable pilferer of the good things of Spain—"Le beau est mon bien; je le reprends où je le retrouve." Cano was a learned and correct draughtsman, occasionally more statuesque than picturesque. He was most careful and delicate in his extremities. His colour is good, pure and like Vandyke's. One of his favourite tints is ultramarine, glazed over with warmish white. As a sculptor he excelled chiefly in embodying the ecstatic reveries of mystic monks, the patient suffering of the resigned Saviour, the sweet soft meekness of the Blessed Virgin, her full mild eyes, small mouth, lowly and thoughtful expression; nor did he ever permit anyone but himself to colour these darling creations of his chisel.

History and Biography in Art.

History, mindless of its real object, sinking to biography, has been swelled into a diffuse catalogue of individuals, who, tutored by different schools or picking something from the real establishers of art, have done little more than repeat or imitate through the medium of either what those had found in nature, discriminated, selected and applied to art, according to her dictates. Without wishing to depreciate the merit of that multitude who felt, proved themselves strong enough, and strenuously employed life to follow, it must be pronounced below the historian's dignity to allow them more than a transitory glance. Neither originality nor selection and combination of materials scattered over the various classes of art by others, have much right to attention from him who only investigates the real progress of art, if the first proves to have added nothing essential to the system by novelty, and the second to have only diluted energy, and by a popular amalgama to have pleased the vulgar. Novelty, without enlarging the circle of knowledge, may delight or strike, but is nearer allied to whim than to invention; and an eclectic system, without equality of parts, as it originated in want of comprehension, totters on the brink of mediocrity.

Constructive Principles of the Ammonites.

As all these shells serve the double office of affording protection and acting as floats, it was necessary that they should be thin, or they would have been too heavy to rise to the surface; it was not less necessary that they should be strong, to resist pressure at the bottom of the sea; and accordingly we find them fitted for this double function, by the disposition of their materials, in a manner calculated to combine lightness and buoyancy with strength. First, the entire shell is one continuous arch, coiled spirally around itself in such a manner that the base of the outer whorls rests upon the crown of the inner whorls, and thus the keel or back is calculated to resist pressure in the same manner as the shell of a common hen's egg resists great force if applied in the direction of its longitudinal diameter. Secondly, besides this general, arch-like form, the shell is further strengthened by the insertion of ribs or transverse arches, which give to many of the species their most characteristic feature, and produce in all that peculiar beauty which invariably accompanies the symmetrical repetition of a series of spiral curves. From the disposition of these ribs over the surface of the external shell, there arise mechanical advantages for increasing its strength, founded on a principle that is practically applied in works of human art. The principle is that by which the strength and stiffness of a thin metallic plate are much increased by corrugating or applying flutings to its surface. A common pencil-case, if made of corrugated or fluted metal, is stronger than if the same quantity of metal were disposed in a simple tube. The recent application of thin plates of corrugated iron to the purpose of making self-supporting roofs, in which the corrugations of the iron supply the place and combine the power of beams and rafters, is founded on the same principle that strengthens the vaulted shells of ammonites. In all these cases the ribs or elevated portions add to the plates of shell or metal the strength resulting from the convex form of an arch without materially increasing their weight, whilst the intermediate depressed parts between these arches are suspended and supported by the tenacity and strength of the material.

Correspondence

[*The Editor does not hold himself responsible for opinions expressed by the writers.*]

Jacobean House, East Hill, Wandsworth.

SIR,—They are going to sell by auction on the 24th prox. a fine old Jacobean house next the burial-ground given by Queen Anne to her colony of Huguenots at East Wandsworth, and close to her palace recently pulled down. This fine specimen of Domestic architecture of the period, with leaden tanks dated, splendid garden façade and old trees would, if preserved, be of infinite interest to American and colonial visitors to this country, and would be a good object lesson to builders who greatly affect this period at the present day. Unfortunately the fine old furniture was sold the other day, but this could be replaced. I called on Lord Avebury to-day, who advised what was best to be done to preserve it all from destruction. There is room for four shops. The train from Waterloo or Victoria and a tram, which stops at East Hill, Wandsworth, would take one there in twenty minutes, and it is really worth an effort to save. The walls are screened with paper, but the old wood panels are quite safe underneath.—Yours faithfully,

J. H. LAMPREY.

Brockley, Kent: July 12.

GENERAL.

The Trustees have decided that until further notice the Wallace Collection shall remain open on the two paying days, viz. Tuesday and Friday, from 11 to 6, instead of, as hitherto announced, from 11 to 5.

The Brighton School Board are about to erect a school for 1,000 children near the workhouse and race-course. The cost will be 22,000*l*.

Professor Max Koner, a well-known German artist, died last Sunday. The comparatively young portrait painter was recently awarded the gold medal of the Paris Exhibition for a portrait of the German Emperor.

A Second Exhibition of Romney's works will be held at the Grafton Galleries towards the end of September. Since the opening of the first exhibition the management have heard of several examples by the artist which were lost in obscurity.

M. Myrton-Micholski, the Russian painter, has been so gratified by the award of a gold medal at the Paris Exposition, he has sent in letters of application for the purpose of becoming a naturalised citizen of France.

An Equestrian Statue of George Washington has been set up in the Place d'Jéna, Paris. It is the work of Messrs. David C. French and Edward C. Potter, and was presented by American ladies.

The Duke of Northumberland was elected a trustee of the British Museum at a meeting of the electing trustees last week.

The Théâtre des Nations, in Paris, of which Madame Sarah Bernhardt is lessee, is to be sublet to the Comédie Française for a period of five months from October 1, as there is no likelihood that the new Théâtre will be ready for occupation at an earlier time.

Mr. Thomas Harris, architect, of Southampton Street, Bloomsbury, died on Tuesday, in his seventieth year.

Plans for the erection of 100 houses in Portsmouth have been approved at a meeting of the roads and works committee; ninety will be erected in Stanley Road, Stamshaw, situated in a line with the bridge leading to Whale Island.

The Anthropological Institute of Great Britain and Ireland held a special meeting on Saturday at Oxford, in order to enable the Fellows to study the collections contained in the Ashmolean and Pitt-Rivers Museums.

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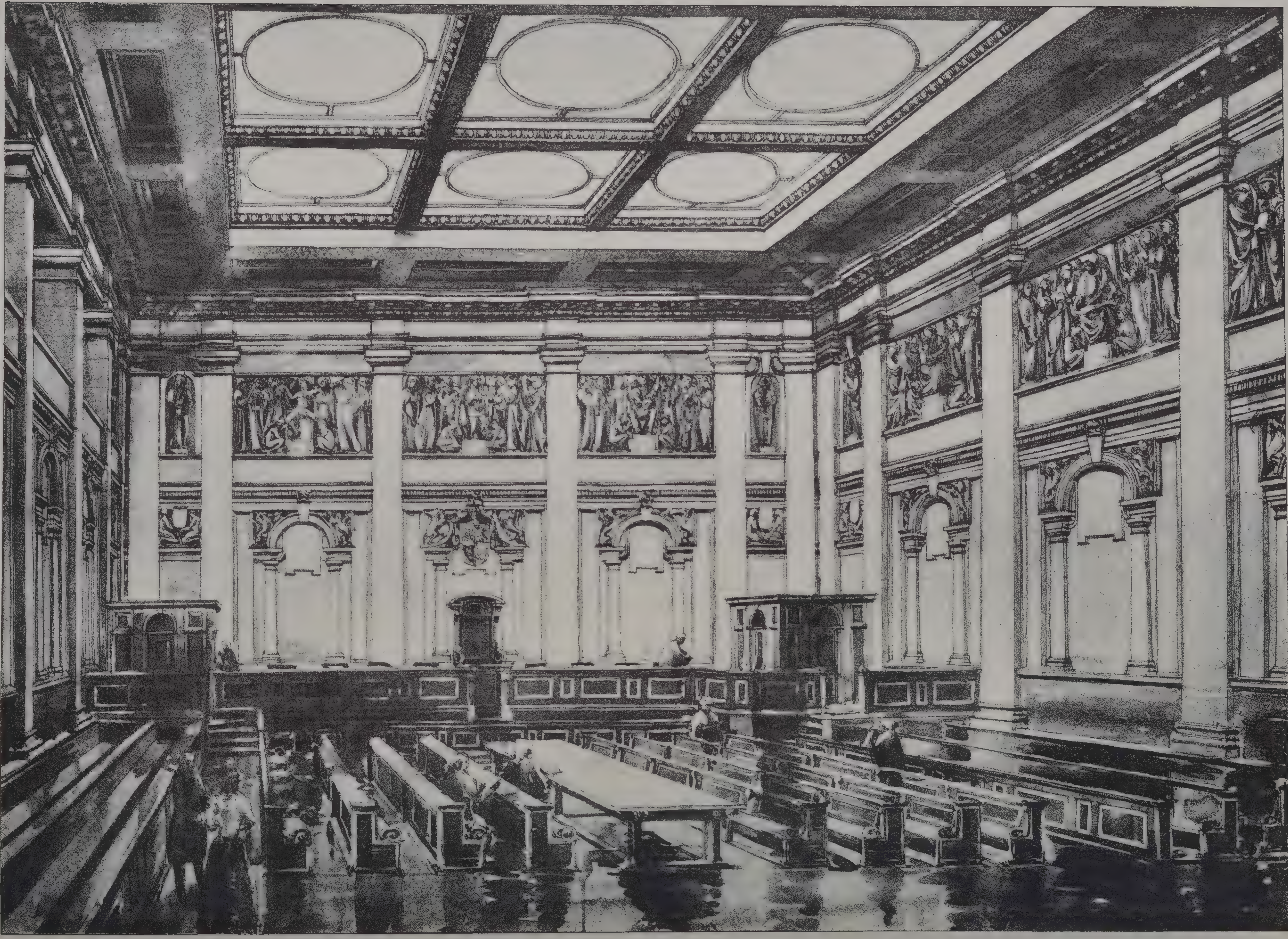
The Architect, July 13th 1900.



INK-PHOTO. SPRAGUE & Co. Ltd. 4 & 5 EAST HARDING STREET FETTER LANE E C

Design for the New Sessions House, Old Bailey.

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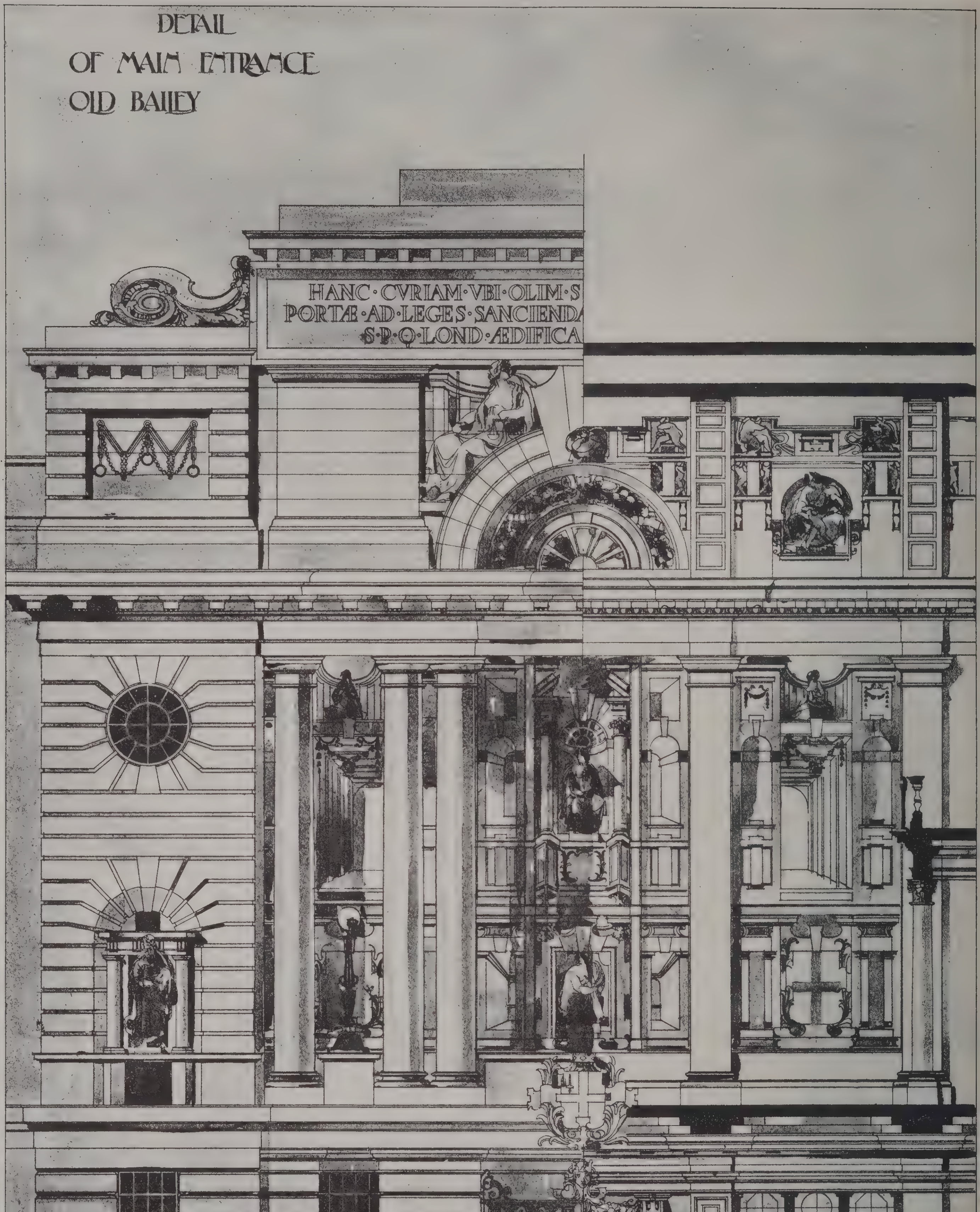

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DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY.

By J. BELCHER, A.R.A.

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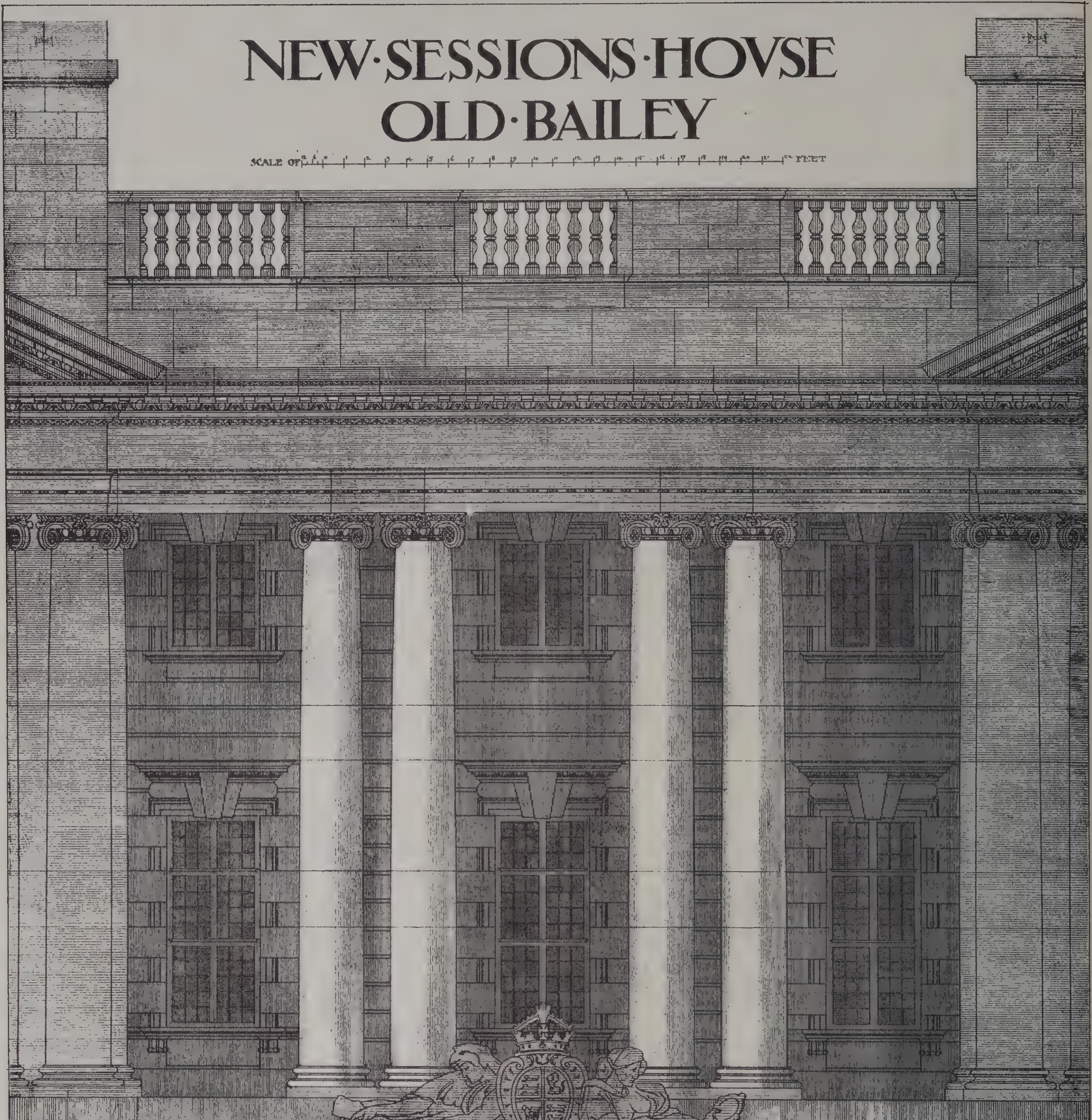

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Selected Design for the New Sessions House, Old Bailey.

Detail Elevation.

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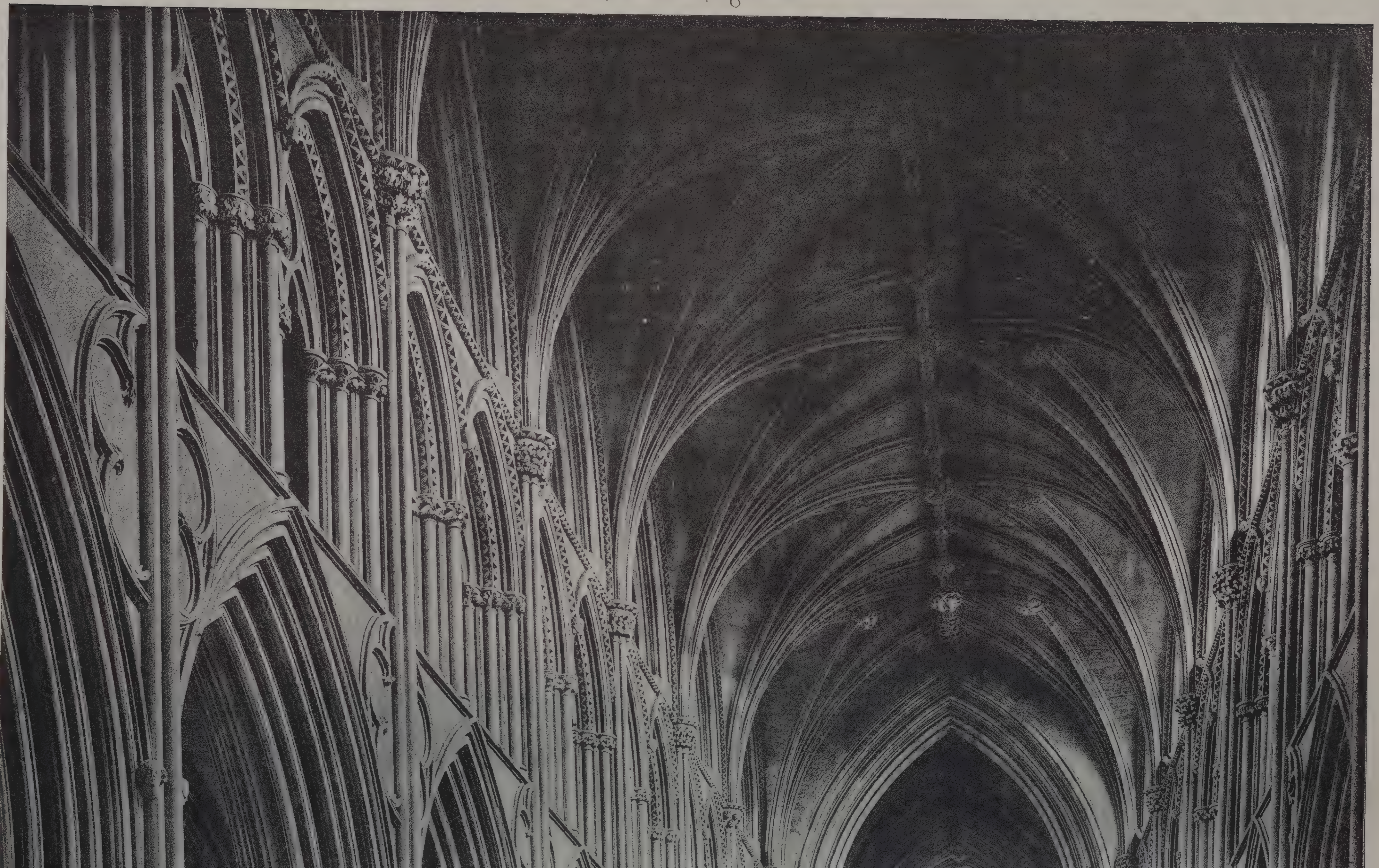
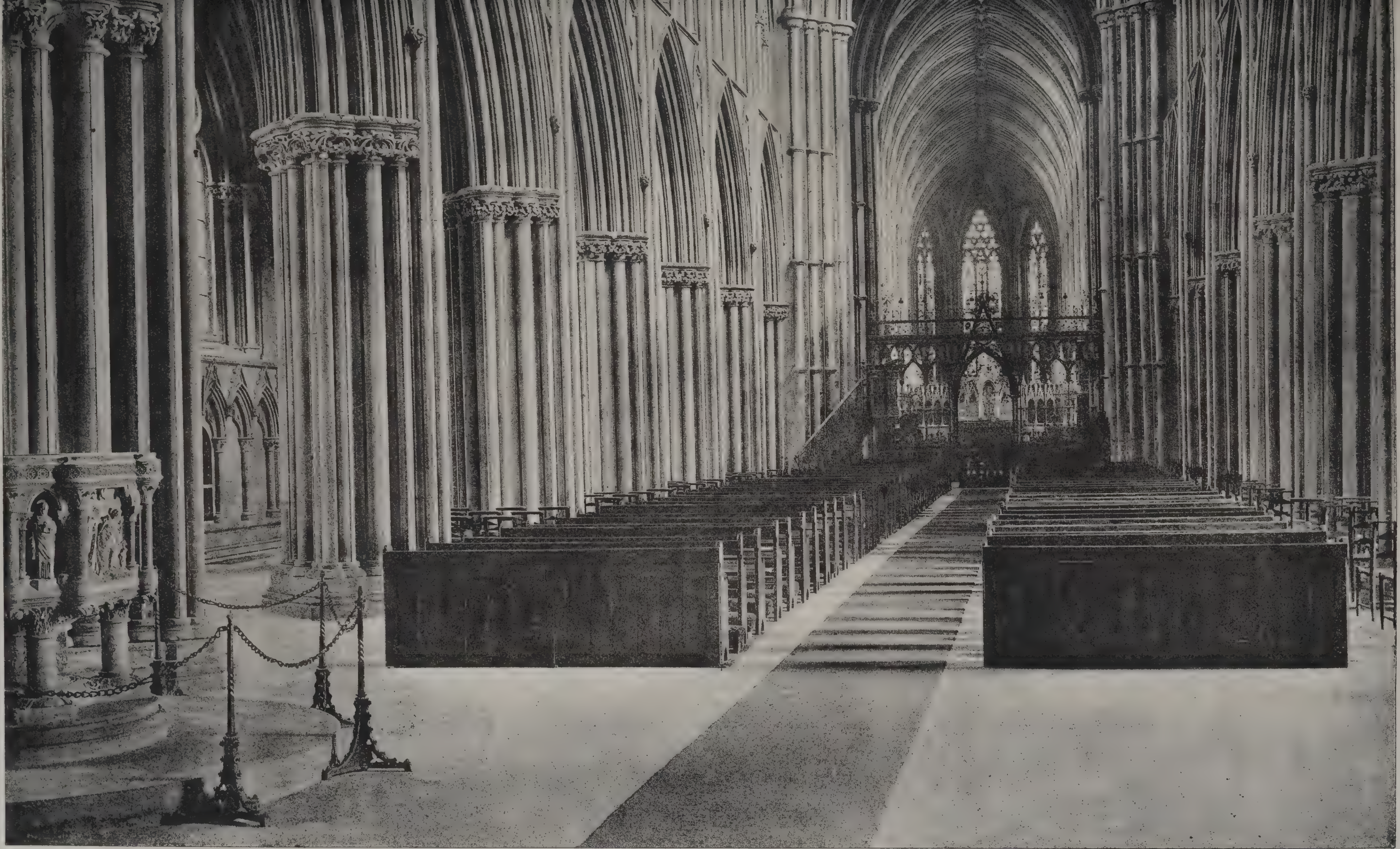
The Architect, July 13th 1900.





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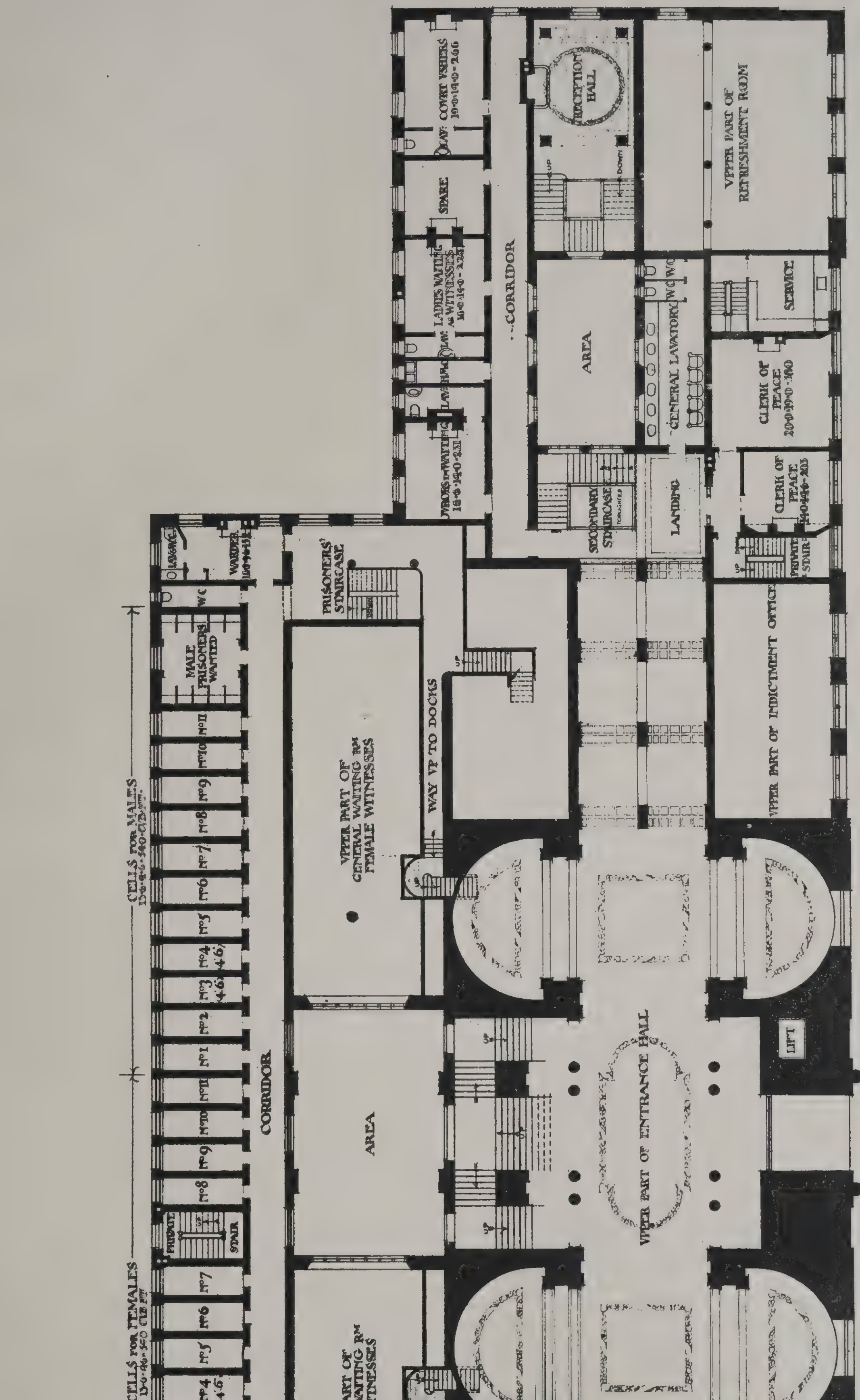
Cathedral Series, No. 288.—Lichfield: The Nave, looking East.



MEZZANINE BETWEEN GROUND & 1ST FLOORS

SELECTED DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY.

E. W. MOUNTFORD, F.R.I.B.A., Architect.

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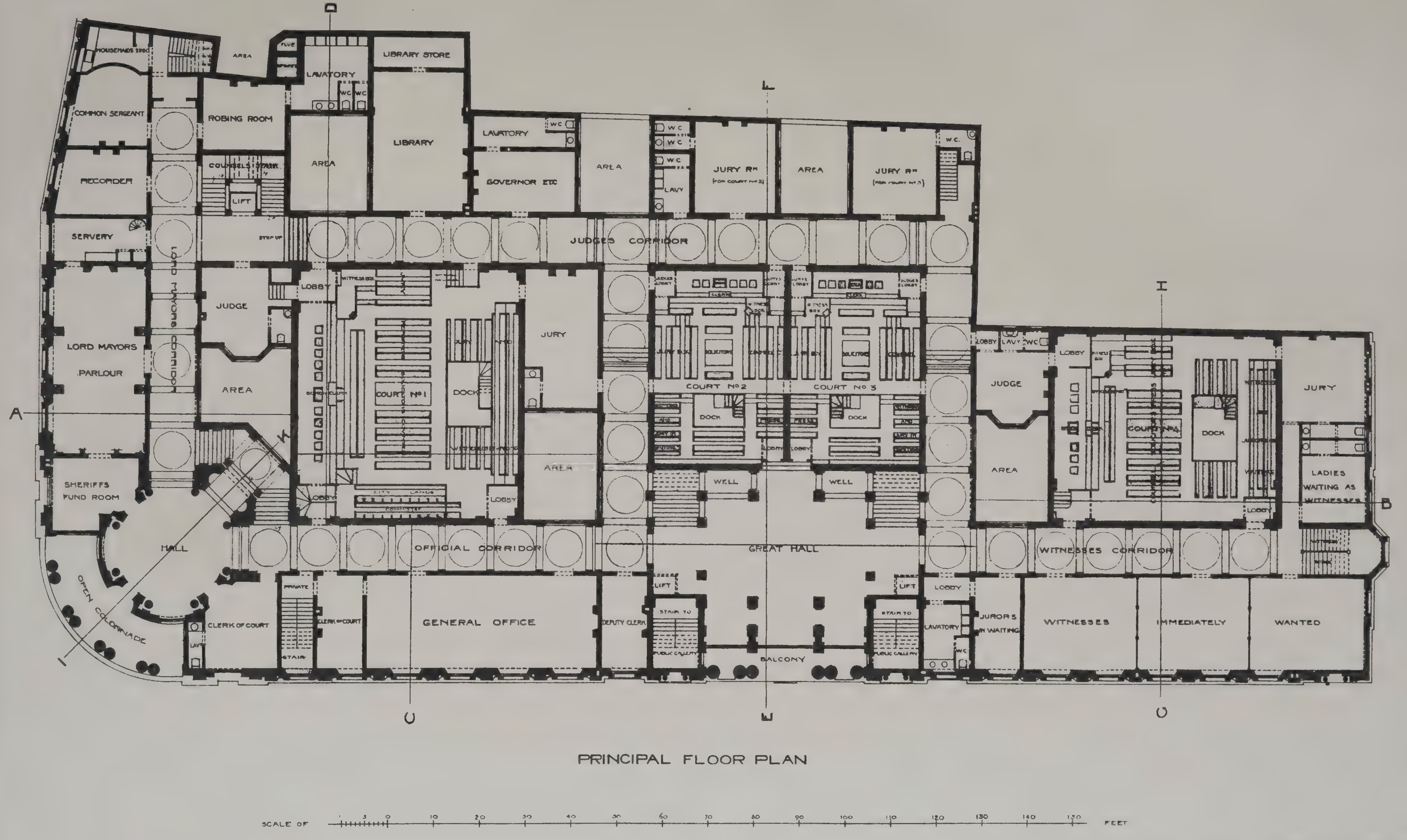

PRINCIPAL FLOOR PLAN

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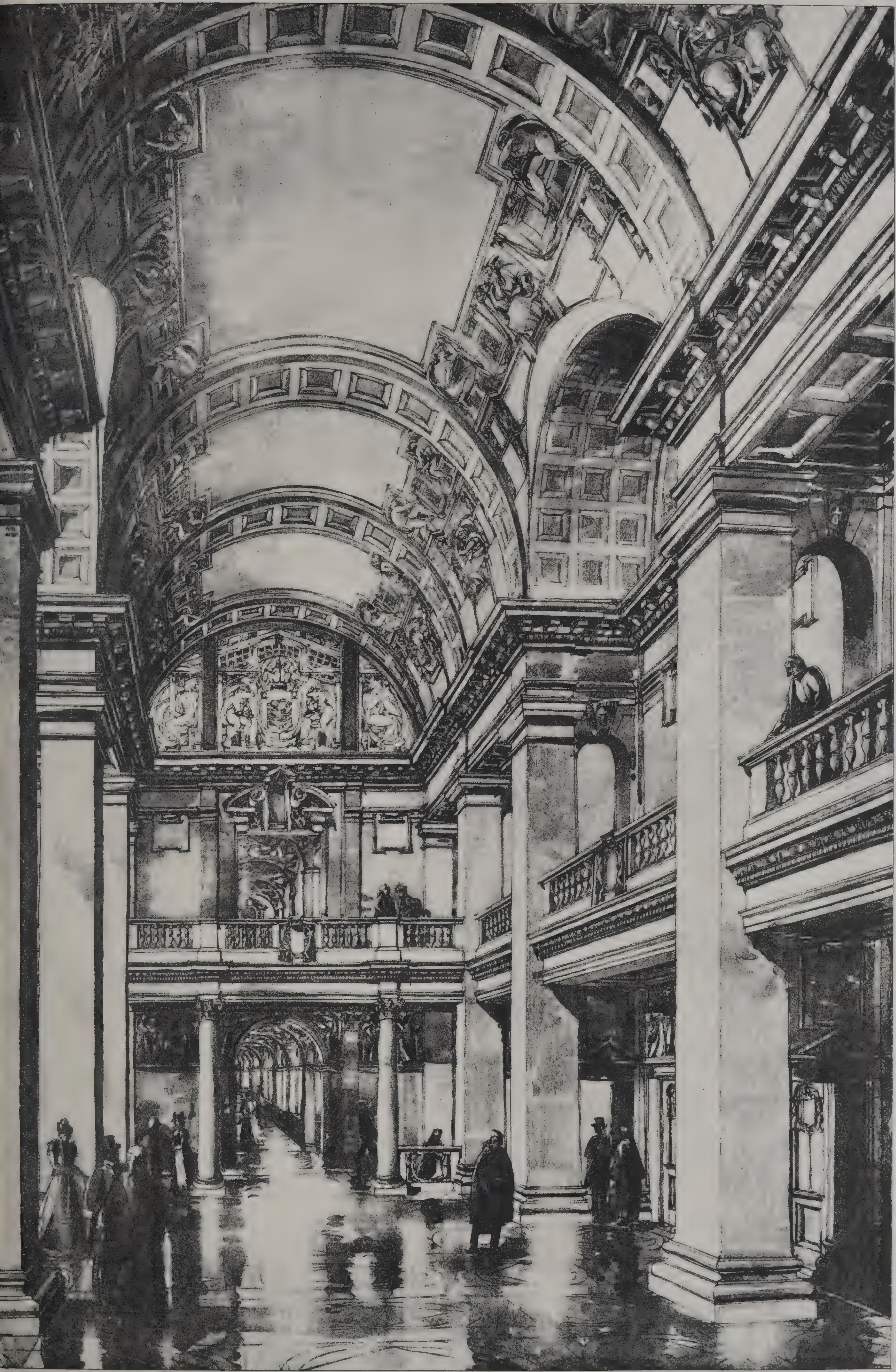
DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY.

By J. BELCHER, A.R.A.



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Design for the New Sessions House, Old Bailey.

INTERIOR OF HALL.

By J. BELCHER, A.R.A.

The Architect.

THE WEEK.

THERE was no architect in Birmingham who was more fortunate than WILLIAM MARTIN, who died on Wednesday in his seventy-second year. He was a sturdy, resolute man, and he owed his success to character rather than to artistic powers. It was a common joke in Birmingham to say he could not understand a plan, but that was only a popular way of suggesting that drawings were not of much account with him, and that he preferred realities to representations. He was a native of Shepton Mallet. When his family came to Birmingham he was bound as an apprentice to Mr. PLEVINS. Afterwards he was managing clerk and subsequently partner with the late D. R. HALL, who was much occupied with Government and other official work. Subsequently he entered into partnership with the late JOHN HENRY CHAMBERLAIN. It would be difficult to find two men who appeared to have so little in common. One was the type of the surveyor-architect, the other aimed at being a disciple of Mr. RUSKIN. JOHN HENRY CHAMBERLAIN was, moreover, a reformer, and as a speaker he soon attained power in Birmingham. The firm secured a monopoly of municipal work during many years. They were the architects for the School Board, and the buildings erected in connection with the improvement scheme were designed in their offices. After the death of JOHN HENRY CHAMBERLAIN there was a change, and other architects were allowed a share in municipal work. But the energetic WILLIAM MARTIN carried on the business, and many important commissions were secured by him. Last year his son was made a partner, and it seemed as if the firm of MARTIN & MARTIN were destined to a new era of prosperity. Among the latest works entrusted to them was the new asylum at Hollymoor. Birmingham has lost a man who in many ways was representative of the spirit of the capital of the Midlands, and one who gained rewards, but toiled laboriously for them.

IN the Workmen's Compensation Act "every person who is engaged in an employment to which this Act applies, whether by way of manual labour or otherwise, and whether his agreement is one of service, or apprenticeship, or otherwise, and is expressed or implied orally or in writing," is considered a workman. But there are a number of references which indicate that he is one who receives weekly earnings. Thus it is said that the amount of weekly payment as compensation is to be determined by the average weekly earnings of the man before and after the accident. The question lately arose in Edinburgh whether a labourer who was not occupied for a full week could receive the benefit of the Act. He was employed by Messrs. BEATTIE & SONS, of Edinburgh, and began his work on December 18 last, when he was engaged during 3½ hours. On the three following days he worked 9½ hours daily. On the Friday, the day he received the injury which afterwards caused his death, he worked 7½ hours. His pay was 6½*d.* an hour. On December 25 he was re-engaged at lower wages, and worked five days of 9 hours and one night. When compensation was claimed the Sheriff-Substitute held that the two periods during which there was employment did not constitute a week, and the representatives of the deceased man were not entitled to compensation. The case was brought on appeal before the Court of Session, when their Lordships decided that the two incomplete weeks should be counted as one, and the case was sent back to the Sheriff-Substitute in order that the damages might be assessed. The case is interesting, for evidently there were two independent engagements, and the law does not generally approve of making a whole out of fractions.

A CASE has been mentioned in the *Times* which is enough to suggest that although we have not an opening corresponding with the Mouth of Denunciation of the Lion's Head in the Venetian Palace, we have a substitute in the ordinary letter-box. It appears that an associate of the Institute of British Architects who has been for two years junior partner in a firm of practising architects, last month was among the competitors for the post of assistant surveyor of buildings under the Commissioners of Public Works, Ireland. He gained first place in the examination, and was officially informed of his success. Afterwards, to his amazement, he was asked to give further evidence of his technical qualifications, in addition to what was required before his examination. He submitted testimonials, drawings and notes on buildings in progress. He was subsequently informed that he could not be appointed. The senior partner of the firm to which the successful candidate in the examination belonged, suggests that the change is due to the action of an unsuccessful candidate, and he asks "whether the Civil Service Commissioners have fully and justly done their duty to the country in this matter, or whether men of really high qualification are ineligible for technical appointments under the English Government?" The subject is so important official reticence might well for once be dispensed with. For if the successful candidate is not eligible what is the use of a Civil Service Commissioners' examination, or examination for associateship by the Royal Institute of British Architects, or the gaining of Institute prizes, or of serving apprenticeship and practising as an architect? Unless all this elaborate but profitless procedure is a delusion it is impossible to understand why anyone who has gone through all should be incompetent to act as assistant surveyor.

A CASE which has been heard before Mr. Justice CHANNELL at Lancaster should be taken as a warning by those who consider that the preparation of tenders is a work of no difficulty, and that it is allowable to play fast and loose with them. The circumstances were curious. The plaintiff, Mr. THOMPSON, a builder, purchased the old Lancaster Infirmary. He sold a part of the ground to the Constitutional Club, and the remainder to the defendant, a wine and spirit merchant. Plaintiff suggested it would be a suitable site for a public-house, and, according to his account, he was told by the defendant to carry out the necessary works. The defendant's version was that the conversation related solely to the removal of some brewery plant, which was only a 50*l.* job. According to Mr. C. F. THOMPSON, defendant's architect, who prepared plans for the proposed building, the tender of plaintiff for the work was 1,860*l.*, which he considered excessive, and a lower tender was accepted. His lordship said there was but one question at issue, and that was the intention of the parties when an agreement was proposed. The extent of the alterations was uncertain. Mr. Justice CHANNELL considered plaintiff was entitled to 123*l.* 15*s.* as probable profits on the work undertaken. The jury accordingly returned a verdict for that amount.

RAYMOND COX sounds more like an English than a French name, but one man at least who bears it deserves any honours which await citizens of the French Republic at the present season. He is an artist, and studied under M. LUC-OLIVIER MERSON, and received much encouragement from the late M. PUVIS DE CHAVANNES. But instead of taking up mural painting M. COX was fascinated by the wonderful ornament which he saw on the examples of silks which are to be found in the Lyons Museum. He may perhaps have had a notion of some day rivalling PAUL VERONESE, and, like the great Venetian, believed it would be advantageous to represent textile ornament with the hand of an expert. The first result of the studies of M. COX is the production of one of the most sumptuous books of our time, which has appeared under the title "L'Art de Décorer les Tissus." The whole of the beautiful plates have been reproduced from the water-colour drawings of M. COX. The text of the volume is a further proof of his enthusiasm, for in it he traces the history of textile decoration from the earliest times. But he has wisely put a restraint on his imagination and on the employment of second-hand evidence. He relies for proofs of what he says on the examples which have been collected with so much care for the benefit of the Lyons weavers. We wish we could say there was patronage for the volume in England. But unfortunately the majority of our producers of the material are not ambitious, and have a weakness for stock patterns, regardless of their unfitness.

THE CINQUE PORTS.

THE visitation of sultry weather every year drives crowds from London, and if statistics could be collected it would, we suppose, be ascertained that the majority find their way to some of the Cinque Ports. Why an island like Great Britain should have five privileged ports and no more is as much an anomaly as why there should be five Orders of architecture. It is easy to assume that five landing-places on the south coast were particularly attractive to strangers, and especially those who contemplated the invasion of England from Normandy or France. But it is doubtful whether there were always five. Just as in Athens only three varieties of columns are to be found, so in Domesday, which must be taken as an official record having some trustworthiness, no more than three ports are mentioned, viz. Sandwich, Dover and Romney. There are several varieties of columns and capitals which are often supposed to have as much right to be considered legitimate as the five Orders, and in the same way a very large number of towns are so closely connected with the Cinque Ports, it has sometimes been found difficult to draw lines of demarcation between them. For instance, the Lord Warden in 1619 considered that one general court should be held at Dover, to which every port under his jurisdiction should send representatives. The ports named in the document are as follows:—Dover, Ringeswould and Kingesdowne, St. Peter's in the Isle of Thanet, St. John and Margate, Burchington, Sandwich, Deale, Walmer, Ramsgate, Brightlingsea in Essex, Fordwich, Feversham, Folkestone, Hithe, Newe Romeney, Lydd, Dengemershe, Tenderden, Reading and Smalled, Rye, Winchelsey, Hastings, Pevensea, Seaford. Dover, Sandwich, Hythe, Romney, Rye, Winchelsea and Hastings were each to send four mariners, merchants, or persons "of the best sufficiency." But all the other ports or landing-places sent two. We therefore can conclude that in the beginning of the seventeenth century the authorities recognised seven instead of five principal ports and sixteen inferior ports within a limited area. It was an old belief that in the time of Edward the Confessor five ports were favoured with special privileges, viz. Sandwich, Dover, Hythe and Romney in Kent, with Hastings in Sussex. William of Normandy, in his negotiations with Harold prior to the invasion, insisted on the possession of Dover Castle, which he made the centre of the Wardenship he established on the south coast, and which he considered essential in order to uphold his communications with Normandy. The wonder now is that he respected ancient divisions, and did not form his selected area into a new county. To a tourist who visits the coast for the first time in 1900 the selection will not appear to have been inspired by prudence. It would now be very difficult for the smallest craft to use several of the ports. But we must not forget that physical disturbances have produced an effect on the coast line. They may have dictated the addition of Rye and Winchelsea as privileged ports about the reign of Henry III.

The ports enjoyed many monopolies, but in return they were subjected to expenses from which the inhabitants of inland towns escaped. During the present week Parliament has had to consider the momentous question of the most expeditious manner of increasing the Navy. In the old days all that was necessary was to send an order to the privileged ports to supply any ships that were required. It is now almost impossible to exhibit the other side of the public ledger and to ascertain the gains for the amphibious inhabitants of the ports. They appear to have had a despotic power which enabled them to insist on provisions being brought to them as if they were in a constant state of siege, and they were exempt from many taxes which were imposed elsewhere in England. The artificers and tradesmen till a comparatively late period resisted the practice of anyone following their occupations unless they had served their proper time as apprentices.

What must now appear puzzling to anyone who has a concern in construction is how the harbours were kept in a condition which enabled them to be used. Engineers know how difficult it is to make the revenue of a port correspond with its expenditure in dredging and other operations. There is, moreover, a constant outlay in providing against the destruction which the waves can cause with ease. The contingencies in coast works are more numerous and more costly than in any others which come under the charge of an engineer. And yet we can summon to our aid special machines which more than surpass the Briareus of the myth. We have one ancient account relating to a pier at Hastings which expresses the difficulties which had to be encountered 300 years ago whenever a tide became irresistible. In 1596—that is, towards the close of the reign of Elizabeth—there were apprehensions of another Spanish invasion, and four ships were ordered to be provided by the ports of Sandwich, Dover, Hythe, Romney, Rye, Winchelsea, Hastings. An immediate instalment of 300*l.* was required from Hastings. The townsfolk were at that time engaged in the construction of a pier. On two occasions, however, the new works were overthrown. The account of the catastrophe, which has been preserved so that "Per exempla periculosa antecessorum caveat posteritas," justifies the descriptions which are to be found in the works of the poets and the dramatists of the Elizabethan age about the tumultuous force of the sea:—

> The pier of Hastings was being reedified by certain western men sent for the purpose from the Cobb of Lyme. And by them was built a high work without the old pier, full south, all of huge rocks artificially piled edgelong one close by another, of a great height but without any timber, yet to men's judgment unremovable it grew to so huge a pile. But notwithstanding, the first winter flow overthrew it in a moment and dispersed the huge rocks like thin planks. And so that cost was lost. But the next year after other workmen of better knowledge (as was thought) were called thence, and by general consent the like piece of work was begun to be again built with the like huge rocks. And for more surety, by advice of the master workman, it was thought best (because they judged the decay of the former was for want of some timber) to lay the foundation of this new work within the timber work of the old pier, and so to continue with timber braces and bars, cross dogs and such like up to the top. And this work was with singular industry and art brought above the full, and by All Hallowtide 1597 well near finished, viz. 30 feet high and 100 feet long at least, beautiful to behold, huge, invincible and unremovable in the judgment of all the beholders, amounting to a great charge, whereunto the whole shire and divers beholders were contributaries of benevolence, besides the town's great expenses. But behold, when men were most secure and thought the work to be perpetual, on All Saints Day 1597 appeared the mighty force of God, who with the finger of His hand at one great and exceeding high spring tide with a south-east wind overthrew this huge work in less than an hour, to the great terror and abashment of all beholders, to the great discredit of the like work hereafter with the country, and to the manifest undoing of the town, which by reason thereof was left greatly indebted. By this precedent let posterity (for whom I record this) beware they never attempt to build them a pier with rocks only, without a mighty frame of timber to be sealed and then belasted with rocks, always remembering that about such work timber must not be spared.

It is no wonder, after such a catastrophe, that the authorities of Hastings became alarmed about their financial liabilities, and that auditors were summoned to investigate the indebtedness of the port and to suggest the best means of meeting the crisis. As one means towards economy it was ordered that the Mayor's fees or wages were to cease, and that the mayors were to be discharged from giving the customary supper on their election day and breakfast on Christmas Day. A new pier was somehow constructed, but it only lasted a limited time, for in 1611 it was described as being in a state of ruin, and an order was made for its reparation. Any of the inhabitants refusing to labour at the reconstruction were to be fined 12*d.* Two years afterwards we find Sir Thomas Glover endeavouring to secure the royal assent to make a haven at Hastings at his own expense. But the works were not immediately commenced, for afterwards in 1635 is there a record that Henrich Cranhalls, a Dutch engineer—for his countrymen possessed a monopoly of such work—reported the possibility of forming a very good haven at the "Priorie."

From the peculiar conformation of its position the works for sea defence at Rye appear to have given rise to a larger number of operations, although they might have been on a smaller scale than at Hastings. There are so many references to expenditure, a modern auditor would be likely to say the harbour works were kept in an unfinished state in order to afford a pretext for evading other liabilities. One time we read that the Landgate is likely to be destroyed, which will entail an expense of 1,000*l.*, or the people have had to lay out 140*l.* to make a stone wall in anticipation of the Queen's coming by sea, or the quays and wharfs will be flooded unless more money is laid out. After spending money so freely in the service of the State to bear a share with the other ports in a new levy, as they said, "doth kill the hartes of them clene."

The Mayor and Jurats of Rye were evidently hard-headed men, and it was difficult at times to convince them about the feasibility of engineering works. Like Lord Melbourne, they valued "masterly inactivity." On June 30, 1576, they wrote to the borough masters of Dunkirk, and sent a representative asking that a man having experience in harbour works should come to Rye. Three Dutchmen, viz. Mihill de Browne, of Dunkirk, Aumon Duport, of Newport, and Anthony Morreau, of Dunkirk, carpenter, were despatched. They viewed the harbour of the Camber and declared there was no likelihood of bringing it to its former condition, because the sea had carried away the head, yet they considered the next "brack" joining it might with great charges be made a head with a great depth and length within the Camber. In consequence of the great charges and the small assurance of the continuance of it, they "mean not to council you to go about it." The Dutch specialists recommended another scheme for carrying three waters into one channel, building out the jetty, &c. Aumon Duport and Anthony Morreau promised to come again when sent for.

In the May of next year they were again invited to Rye, but the works were considered too costly to be undertaken in their entirety. Three years afterwards the operations, if any, were suspended. The Lord Warden was requested to implore the Queen or the Privy Council for succour, without which the town could not be preserved. It is uncertain whether the works were ever accomplished. A theory arose that the "inning" of some of the marshes adjoining the channel was destructive for harbours, and the real cause of the ruin and decay of the town was to be ascribed to operations by John Stoneham and others in reclamations.

In 1591 an Italian appeared in Rye. His name is written in various ways, such as Gienily, Gedivilo, Genebelli, Jenebill. He considered there would be no difficulty in improving the decayed harbour at a reasonable charge, and making it available for larger vessels than formerly. His report was as follows :—

> The pattern (plan) hereunto joined is the figure of the port of Rye, made according to the sight which I have had thereof. I esteem that in the space of four or five years the said port may be brought to such perfection as was never done before, except only the parcel called the Camber at the east, to the benefit of the rivers, creeks, or waters which enter into the said port as of the moors or marshes thereunto joined. The cost will be 4,000 *li.* to wit—2,000 *li.* ready money for the first year and 2,000 *li.* for to continewe yf it shalbe fynished all, to wete 500 *li.* every year. The conditions for the work are that there should be paid to me my wages and charges in such manner as the Privy Council suggested when I tended on Her Majesty's service.
>
> When the said port shall be deeper by three feet than it is at present, there shall be paid unto me for the half of my recompense a certain sum of ready money.
>
> When the work shall be finished with success the said Lords, for the complement of my recompense shall ordain unto me a pension for 25 . . . years, whereby I may have means to employ me with my industry to maintain the said work.

The Lord Warden had an interview with the Italian, and approved of his scheme. Gienily was then sent by the Mayor and Jurats to the Lords of the Council. Their lordships directed that Sir Thomas Wilford, Sir Henry Palmer, William Borrowes and Paul Ivye should proceed to Rye and confer with the Italian and obtain all information concerning the proposed works and the likelihood of their execution. The inspectors may have discovered defects in the proposal, as we find it stated that Gienily's plans had become displeasing to the Corporation, for the works proposed by him were considered to be more likely to benefit other places, and especially Winchelsea, than Rye. Then we learn an order was made by the Mayor and Jurats stating that as Frederick Jenebill had most treacherously abused their township by his false illusions in promising to amend the harbour of Rye, it was agreed that henceforth they would no further intermeddle with the said Jenebill nor with any of his devices. He had, however, a bill against the Corporation for 82*l.* 9*s.*, and the settlement of it was left to the determination of the representatives of the Lords of the Council.

Although engineers could be given up and their plans rejected, the difficulties of the harbour still remained to be grappled with. In 1598 we find Lord Buckhurst appealing to the justices of the peace in the county of Sussex that they would give "voluntary, benevolent and commendable contribution" towards the effecting of the proposed works. Robert Sackville, a statesman of the time, also implored aid on the ground that the improvement would be "profitable for the common wealth in general and particularly for this county of Sussex." Although aid might be forthcoming the Corporation had no definite notion of what was required to be executed. A soldier named Thomas Berigge, who was a native of Rye or its neighbourhood, was able to persuade the Mayor and Jurats that he invented divers instruments which, if used, would amend the defects of the harbour. He was then serving abroad under Sir John Brokett, and an appeal was made to that officer asking him to grant a license to Berigge to enable him to come to England and undertake the works. Sir John probably was accustomed to such applications, for we hear no more of the wonderful engines. In 1605 the appeals for aid still continued, for Sir William Twysden obtained a dish of fish consisting of "one codling, three gornards, one playse, one scalloppe, thirty rochetts, eight whitinges and a thorneback" in recognition of his services.

As time went on the condition of the harbour appears to have become more dangerous, for the appeals grew more urgent. The Earl of Northampton was no sooner appointed Lord Warden than he was informed that the town was almost undermined by the sea, and that as all trade but fishing had departed, the houses were so meanly rented and so many standing empty that it seemed impossible to levy upon the said Corporation or of the lands and tenements within the same any proportionable sum of money for the effectual repairing thereof. Through his lordship's efforts there was some hope given of State aid, but it was decided that more information should be forthcoming about the manner of expending the money. In the emergency the Corporation had recourse to John Stoneham, who had been employed at Dover. He was sent to the Lord Warden in order to suggest "how such work is to be done, and how the requisite money is to be raised without charge to the town of Rye, the which he himself by your honourable a favour will take upon himself to effect at his own charge," an example of liberality for which there are few precedents. Next we learn that a Mr. John Harmon, of Maidstone, told the Vicar of Rye that he would become security for the carrying out of the works.

The peculiarity of Rye harbour was that when all arrangements had been concluded it was inevitable to begin again. Lord Zouch succeeded to the office of Lord Warden, and in 1616 we find the following epistle was sent to him :—"This day our mayor, Mr. Marke Thomas, made known to us of your most honourable love to us towards the amendment of our poor decayed haven, and withall advertised us of your great care therein in addressing your letters unto the Low Countries, to very substantial and expert workmen well able to judge of such waterworks, as is to be done about these affairs. We pray you again to send over your letters unto those workmen, that both or one of them may come over and view our decayed harbour." From this it would seem that after forty years of surveying, appealing and interference on the part of the great officers of State, the project for improvement was in the same state as when the three Dutch engineers were first summoned. Having experience, the familiar round was again traversed by the Corporation. A petition was sent to King James corresponding with many that had been received by Queen Elizabeth. But James was, we suppose, wearied of Rye and its harbour, for another appeal was made to the Lord Warden as "our only stay and refuge next under God and His Majestie." Owing to the decay of their harbour, and consequently of the fishing industry, a hundred of the fishermen were "ready to begg and starve;" many of them had forsaken the town, and left their wives and children to the parish cost, the very few persons in trade, "of any abilitye to live," being so burdened by continual cesses and taxes that they determined to leave the town. Thus the town, not long previous of "good respect and importance," was likely soon—"if som gracious aspect shine not uppon it"—to be quite depopulated and abandoned.

It is impossible to trace by whom the improvement of the harbour was at last attained, but from a description of its condition in 1652 it would appear that it was considered to be one of the most convenient along the coast. The peculiar liberties, exemptions, and other ancient privileges of the Cinque Ports were, however, considered anachronisms for which no improved harbour could compensate. In 1685 a demand was sent for the surrender of all the charters possessed by them. They had to be handed over to Colonel STRODE, who was the constable of Dover Castle. It was promised that each charter should be regranted "with all rights, privileges and advantages as you can desire and are fitting for the king to grant." But they were never returned. In spite of the change in standing, many of the peculiarities were overlooked, and years were required to bring the Cinque ports into conformity with inland towns in their organisation. There may have been abuses, but the circumstances we have mentioned connected with Rye harbour, and which correspond to a great extent with what took place elsewhere, will suggest how difficult was the task which fell on the jurats when they were obliged to undertake the conservation of harbours.

ELECTRIC MOTORS: THEIR SUPPLY AND MAINTENANCE BY ELECTRIC-LIGHTING AUTHORITIES.

A PAPER embracing this subject was recently brought before the Municipal Electrical Association. In the first place, before considering actual details, it will perhaps be interesting to briefly discuss the whole question of the policy of electric-lighting authorities hiring motors to their customers. As has often been previously referred to in this Journal, the cost of producing electricity is greatly affected by the extent of use—that is, the load factor, and also upon the time at which the electricity is used. The load factor is high when there is a demand for a large number of hours per day, and the time at which it costs least to supply electricity is when the demand on the works is small. In a works supplying electricity for lighting only, the load factor of each individual consumer is low, especially in the summer, and further, all the consumers require the supply at one time, the plant being idle except for a few hours in the evening.

It is of course self-evident that electricity can be supplied cheaply from a lighting works if used in the daytime, with a great benefit also to the economy of the works, as the chief expenses are interest on capital, wages and management, which are the same practically whether the works are busy or idle. In a manufacturing town, therefore, the attention of the electricity-supply authorities is called to the uses of power in their district. Many manufacturers have small steam or gas-engines, which in most cases are worked under extremely uneconomical conditions; moreover, manufacturers require power chiefly in the daytime, and as a rule it is required for many hours per day when compared with lighting. Therefore, if these users of power can be induced to discard their engines for electric motors, the electricity works will obtain consumers who will require a demand for many hours per day, and also principally use electricity at such times when the plant would otherwise be idle.

These "power consumers" have electricity offered to them usually at about half price or less for two reasons:—(1) To make it economy for the consumer to abandon small engines and use electric motors; (2) because the nature of the demand is such that a fair profit can be made by the suppliers, notwithstanding the low charge. It is, however, a rather difficult matter to persuade a consumer, say, a small tradesman, to sink capital in purchasing a motor to effect what might be to him a doubtful saving, and, in fact, he often cannot afford to do so. The natural result is, therefore, that as a further inducement the electricity-supply authorities are now offering to supply suitable motors on hire, or on the hire-purchase system, and as the users do not generally understand to a sufficient extent electrical matters they (the supply authorities) also undertake to keep the motors in proper condition.

The contribution above referred to deals chiefly with the troubles experienced in the maintenance of motors, and is of interest to all actual or possible users of electricity for motive-power purposes, because of the experienced gained in their practical management and as to the proper type of motors and accessories for various classes of work.

It is pointed out that electric motors have been very much improved of late years, and it may be added that an electric motor may now be obtained which is a thoroughly mechanical, efficient, and reliable piece of machinery, capable of adaptation to nearly every class of work. Electric motors also have the advantage of taking up very little space compared with the power they develop, and they can be placed practically wherever convenient. There is no loss when they are not in use, and they are simple to manipulate. There has been occasionally an impression that electric motors are expensive in upkeep, but the author endeavours to show that the blame is to be attached elsewhere. It is with the starting arrangements that the fault usually lies. The type of motor also must be suitable for the work. Standardisation must not be carried too far in connection with motors or their starting gear.

One very frequent use for an electric motor is for crane or hoist work. In many cases the motor must be operated from any floor. To do this the starting resistance first adopted at Bradford, at which place the hiring and maintenance of electric motors has been dealt with on a considerable scale, was usually connected to a chain or rope extending through the different floors of the building. It was found that leaden plates placed at various depths in jars of acid, the rate of falling of which plates was controlled by oil or glycerine dash-pots to prevent the current rising rapidly before the motor attained its normal speed, did not answer well, the action of the dash-pots being affected by temperature, in cold weather sometimes sticking altogether and in warm weather falling too rapidly, the result being collapse of the main fuses and sometimes damage to the motor. Air dash-pots were next tried, but for some strange reason never on the liquid resistance, but on the ordinary wire resistance with contacts. The trouble with the latter was, as might be expected, with the contacts.

It may be well to say shortly that the motors used were unsuitable in design, and that it was found necessary to replace the simple shunt machines by compound motors, in which the rush of current at starting increases the starting effort. As a matter of fact, it is certain that the series motor is the correct one for such work. The shunt motor is most suitable for running at a constant speed, but for this very reason it is essentially unsuitable for a lift or hoist. A motor is required which can be permanently geared to the lift, and will operate a heavy load at a low speed and a small load at a higher speed. Such requirements are to be found in the series type of motor, which starts easily with a reasonable current and will rapidly attain a fair speed. This construction will obviate most of the starting difficulties for this class of work, and fuses will be less liable to fail or starting resistances and armatures to be damaged.

The next class of work referred to in the paper is that of a motor driving shafting at a constant speed with a nearly constant load. In this case the motor need only be started practically once a day, and in consequence it is only necessary to prevent the starting-switch from being operated too rapidly. It was found that a worm wheel and worm motion made it impossible to move the lever across the contacts too quickly, and this arrangement was simple and satisfactory. Of course, for such work a shunt motor is the proper type for use. As could be expected, automatic switches for preventing overload when tried were found to be troublesome rather than useful. A fuse is quite sufficient protection in such a case.

A further use for electric power considered was that of a motor driving circular saws, woodworking machinery and heavy machine tools—in fact, in all cases where it might be necessary to start under a heavy load; also where heavy temporary overloads may be met with frequently. As the speed is required to be fairly constant a series machine is useless, but it would appear necessary to have a compounded machine (part series and part shunt) to increase the rotary or twisting effort when the load is heavy. This will easily prevent all the difficulties as to overload, and it is only necessary to arrange for a proper starting-switch. For such a purpose a switch should be used which prevents the current from rising rapidly, and the resistance should be of such a size that it will not overheat seriously when the machine is being started. As the author remarks, most starting resistances are made too small, and overheat seriously.

There is another danger which must be guarded against, and that is, in the event of the supply from the mains being cut off for even a few seconds, the motor will, with an ordinary switch, be left connected to the mains, and the fuse will almost certainly collapse when the pressure is again applied. This danger is not so serious where the electricity works give a steady supply, but unfortunately in some cases the supply is liable to be cut off. It is usual to arrange an attachment to the switch which will release the lever and bring it back to the "off" position if the current falls below that necessary to drive the motor when not loaded.

It must be remembered that all such automatic attachments cause trouble, and are to be avoided if possible. It would appear to be more satisfactory if a distinct automatic switch were used which breaks the circuit when double the full load current passes. This would in almost all cases save the fuse, and the automatic arrangement would easily be reset.

The troubles which have occurred at Bradford with the motors themselves were described, but we agree that if a motor is tested thoroughly before payment is made, a great many of the defects can be eliminated with the greatest ease.

In this connection it is to be remarked that a condition should be insisted upon when a purchase is arranged, that the machine is to be tested and approved by a recognised electrical testing authority before payment is made.

It may be interesting to add a table giving the basis of a hire and hire-purchase arrangement introduced by a large electrical power company.

Horse-power of Motor.	Hire per Quarter.			Hire-purchase. Twelve Quarterly Payments of		
	£	s.	d.	£	s.	d.
⅙	0	9	0	0	15	0
¼	0	16	6	1	7	0
½	1	4	6	1	17	6
1½	1	7	6	2	5	10
2¼	1	13	6	2	15	10
4	2	0	0	3	8	0
6½	2	15	0	4	10	10
9	3	7	6	5	12	6
13	3	19	0	6	10	10
18	5	7	0	9	0	0
23	7	0	0	11	8	0

This rental includes the cost of supplying and fixing the motor on the consumer's premises, together with the necessary starting-switch, resistance and fuse, and also a quarterly inspection by the company. The consumer to provide oil, brushes, &c.

In conclusion, it may be said that with a system of hire or hire-purchase and maintenance of electric motors by the electricity-supply authorities to their consumers considerable attention must be given to individual requirements, the purpose of the motor and its usage, so that the most suitable type and size of motor and starting-gear may be adopted, otherwise success cannot attend this important development of the application of electricity to motive-power purposes.

THE COUTTS FAMILY.*

It is one of the privileges of bankers to be allowed to act as auxiliaries in building and other constructive enterprises. They are not sufficiently proud of the position, which may arise from a defective system of education. The English banker is not always able to realise the importance of building projects, and he is too disposed to apply a scale of percentage returns. When through the shortcomings of clients who are not connected with architecture he collapses, a number of buildings may have to remain in an incomplete state for a long time, as occurred some years ago in Glasgow. It was then concluded that an excess of liberality towards speculators in building was the cause of the ruin, which of course was inaccurate. Sometimes, as in the case of the Gurneys, a banker is unable to discriminate between real and imaginative prices, and when he discovers that one contractor charges much more, at least on paper, than another man who expects prompt payment in cash, he is attracted by the former and advances money freely, thus insuring ultimate loss for himself. All this arises, as we have said, from insufficient knowledge, and it would be a benevolent undertaking for some architect, civil engineer or contractor to lecture before the Bankers' Institute upon the economical principles which govern contracts.

It is also a shortcoming of bankers to have been so long in recognising the advantage to themselves of setting an example to people in other businesses by the erection of premises which would have some claim to be considered architectural works. That is, however, not confined to this country. Every tourist on the Continent who has had a draft cashed must have often felt surprised at the unpretending shops where the representatives of Lombard Street are often to be found. Thackeray did not exaggerate when he described the banker at Coir coming out from the homely dinner-table round which his family sat in the back parlour, and asking him to oblige by calling for the money a little later. In fact, many of the great foreign bankers appear to be possessed of "the pride which apes humility," and which is not the most venial variety. But we must admit that bankers have of late years displayed more spirit, and the Old Lady in Threadneedle Street, who started in 1694 in rooms over a shop, must now be amazed at the costliness of the premises which surround her.

About fifty years after the foundation of the Bank of England by William Paterson, John Coutts set up the first private banking house in Scotland. The main business was the negotiation of bills of exchange. The premises were certainly as humble as could well be found, for they consisted of the second floor of the President's Stairs, Parliament Close, Edinburgh. Scott describes Colonel Mannering's amazement when he discovered after much difficulty the elevated residence of the leader of the Scottish Bar, Mr. Pleydell. In the old days there was no belief in the necessity of having a large number of cubic feet of air space for every individual. People kept as close to one another as they could, and Coutts's bank in a back alley off an alley would disgust one of the occupants of Baroness Burdett-Coutts's model dwellings in Bethnal Green if it were offered to him as a residence. Indifference to architectural appearance apparently has been accepted as a characteristic of the family, for it cannot be denied that the banking-house in the Strand does not correspond with the world-wide reputation of Coutts & Co. Soon after the establishing of the Edinburgh bank a London agency was opened in Jeffrey's Square, St. Mary Axe. Another agency was set up in Rotterdam, of which the chief trade was the shipping of tea, spirits and other articles of contraband for the smugglers on the east and north coasts of Scotland. The head of those establishments was Lord Provost of Edinburgh, who tried smugglers and supplied them with necessaries with equal impartiality. From time to time there were various changes in the firm, but none of the early Coutts appeared to have understood the necessity of display. Like Shylock they preferred a sober treasure house, which a woman would be sufficient to guard, and into which not even the sound of shallow foppery was allowed to enter. Mr. Richardson on this subject says:—

> In modern times a joint-stock company usually signalises a new epoch in its existence by erecting new, enlarged and expensive buildings; but such was not the old way. Sir W. Forbes tells us that the counting-house of John Coutts & Co., bankers, Edinburgh, "was continued in Provost Coutts's house in the President's Stairs, Parliament Close, in which Mr. Stephen's family had resided since the death of Mr. John Coutts. In London the counting-house was also continued in the house where it had been first established in Jeffrey's Square, St. Mary Axe, in which Mr. Patrick and Mr. Thomas Coutts had resided, and which was now occupied by Mr. and Mrs. Cochrane." The old custom "of living above one's shop" was also practised by Mr. James Coutts, M.P. for the

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* *Coutts & Co., Bankers, Edinburgh and London.* Being the Memoirs of a Family Distinguished for its Public Services in England and Scotland. By Ralph Richardson, F.R.S.E., F.S.A.Scot. (London: Elliot Stock.)

city of Edinburgh, and senior partner of the rising firm of James & Thomas Coutts, bankers, Strand, London. At that time the Strand was not the overbuilt thoroughfare that it now is. Whilst on the most frequented route to the City, and eminently suited to catch business, Messrs. Coutts's banking-house on the south side of the Strand commanded from its back windows an uninterrupted view of London's greatest avenue, the Thames, and beyond that a distant prospect of the Kent and Surrey hills. When Thomas Coutts succeeded James as resident above his Strand banking-house, he particularly enjoyed this view of the river and hills beyond, and when a terrace called the Adelphi was proposed to be erected between the Strand and the Thames, and threatened to interrupt the view he so much liked, Thomas Coutts purchased a "vista" the width of his house, and stipulated that a street should lead from the back of his bank to the Adelphi, with a clear view over the Thames, so that his "vista" might never be closed.

Thomas Coutts, the fourth son of the Lord Provost, who was the creator of the bank as it is now known, was born in Edinburgh in 1735. He was taught at the High School, and among his schoolfellows was Thomas Mylne, who was at a later time surveyor of St. Paul's Cathedral, and, in spite of Dr. Johnson's opposition, architect of Blackfriars Bridge. But Thomas Coutts was no patron of Mylne's. Being wealthy and moving in the society of the time, he might have contracted an aristocratic alliance, but, like the renowned Bailie Nicol Jarvie, of Glasgow, he preferred to marry his housemaid and set up housekeeping in St. Martin's Lane. Much, however, was excused as the eccentricity of a millionaire. One of his daughters married the Earl of Guildford, a second became Marchioness of Bute, and the third married Sir Francis Burdett, who at one time was renowned for his Liberal opinions, and was willing to be the forlorn hope in encountering abuses. After his first wife's death Thomas Coutts married Harriet Mellon, the daughter of a strolling player, who was one of the most agreeable actresses of the time. Judging by her portraits, she could not be considered handsome, but no kindlier woman trod the stage. Poor Benjamin Haydon's "Diary" reveals the admiration with which he and many other artists regarded her. There was a general regret among them when it was found that in less than a month after the death of Mrs. Coutts "dear old Tom" married Harriet Mellon, of Holly Lodge, Highgate, privately at St. Pancras Church, and a few weeks after remarried her in the same building. She was allowed to expend 40,000*l.* in the first year, and there can be no doubt the greater part of it went to benevolent purposes, and many an artist was able to profit by her accession of wealth. Seven years afterwards he died, and his whole fortune amounting to about 900,000*l.* was bequeathed to her. In the course of five years Harriet Mellon became Duchess of St. Albans, and enjoyed the dignity for ten years. She died in 1837, and with a magnanimity which did not surprise those who knew her, she left to the present Baroness Burdett-Coutts the whole of the fortune with which she was endowed.

Those who have an interest in banking affairs and wish to understand the causes of the prosperity of the house of Coutts & Co. will find information in Mr. Richardson's book. What seems to us most remarkable in the history is the account of the uses which were made of Thomas Coutts's wealth. The Lady Bountiful who succeeded to the possession of so much wealth had none of that fear of misspending money on buildings which was a family trait. Since the olden days of the renowned Bess of Hardwick no woman in England has expended so much in the erection of buildings as Angela Georgina, Baroness Burdett-Coutts. The church of St. Stephen, Westminster, with its associate buildings, of which Benjamin Ferrey was architect, was supposed to have cost 90,000*l.* Another church dedicated to the same saint was erected at Carlisle She built several other churches in London. Her father and mother were buried in Ramsbury Church, Wiltshire, and "their daughter helped to restore Ramsbury Church as well as the adjoining church of Baydon, and erected numerous model cottages to supply the poor of the parish of Baydon with sanitary dwellings." Believing in the refining influence of form, about 200,000*l.* was spent in the erection of Columbia Market. The Mediæval period could not produce a market which is equally refined in style. No doubt it was a failure, because costers and their customers preferred the animated streets to an enclosure, which they considered was only another form of a church. Near the market are model dwellings, and some of the rooms are finished in a style which would be worthy of any of the mansions on the Chelsea Embankment. But the mere inventory of the good works which the Baroness Burdett-Coutts has had carried out at her own cost would occupy many a column.

The history of a bank must necessarily be wanting in sentiment, for the business which has to be narrated does not allow of any display of the emotions, and the agents should, in one sense, resemble the metals they handle. But it is a peculiarity of the house of Coutts & Co. that one representative of it has been among the most generous philanthropists of the century. The difference between the narrow wynd in Edinburgh where the business commenced, and the charming grounds of Holly Lodge, Highgate, is not more marked than that of the ancient Lord Provost who was willing to co-operate with smugglers, and the gracious lady who has made her family name worthy of blessing in many lands.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The following gentlemen have passed the Midsummer examinations :—

Preliminary.—David Alex. Adam (Newcastle-on-Tyne), Percy Tidswell Adams (Bournemouth), Ernest Gladstone Allen, Hubert Dennis Aubrey, Gervase Bailey, Christopher Bannister (Crowborough), Robert Gerald Barrow (Bideford), Tom Forest Beazley (S. Shields), Leslie B. G. Benson (Yeovil), Arthur Gilbert Berry (Norwich), Richard H. P. Bevis (Southsea), Ellis Rawson Birks, Henry Blackadder (Broughty Ferry, N.B.), Fitzroy Frederick Boldero (Penkridge, Staffs), William Edward Brooks, Baldwin Brown (Bradford), George Ronald Bryce (Glasgow), Albert Edward Bullock, Stephen Burgoine, Geoffrey Burton, Benjamin Harlow Butters (Brighton), William Wellesley, James Calthrop (Chelmsford), Archibald Neil Campbell, Cyril Barnabas Chesshire, George Reginald O. Chorlton (Manchester), Henry Francis Clarke (North Shields), Charles Emmerson Clouting (Cambridge), Wm. Henry Collin, Robert Tyers Cooke (Leicester), Joseph Berkeley Cubey (South Shields), Ernest Thos. Cunliffe (Blackburn), Thos. Lawrence Dale, Noel John Dawson (Ipswich), Sidney Reyner Day (Skipton), Charles Willing Denton, Alfred William Douglas (Matlock Bank), Harold J. T. Duncan, Harold Hicks Earnshaw (Manchester), John Joseph Eltringham (Durham), Harold Quentery Farmer (Stalybridge), Henry F. P. Ford, Douglas Alfred Forster, Edw. Lawrence Gaunt (Ilkley), Frank Stanton Gildersleeve (Hastings), Chas. Jno. Goodwin, Reginald John Goulston, Robert Francis Graham, B.A.Cantab.; Leonard Bishopp Grant, Jordan Green (Birmingham), William Greenwood (Blackburn), Ronald Hamilton Greig, Sydney Robert Griffen (Plymouth), Arthur Bernard Harvey (Canterbury), Arthur Hugh Hasnip (Hastings), Walter William Hitchins (Plymouth), Douglas John Hobgen (Chichester), Arthur Rowland Holman, Percy Aspden Horrocks (Bolton, Lancs.), Walter Arnold Ingledew (Tynemouth), Thomas Frederick Ingram (Wakefield), Charles Henry Jackson, Hugh Parry Jones (Conway, North Wales), Matthew M. C. Jones (Glasgow), John Norman Keasley, John Harold Kennard, Harold Kershaw (Worthing), William Alex. Kidd (Greenock), James Henry Lang (Dukinfield), Wm. Henry Lomas (Burnley), Charles Ernest Lovell, Percy Wells Lovell, Percy Luker, John Bernard Lund (Chorley, Lancs.), William Mackintosh (Inverness), Herbert Pemberton MacNalty (Winchester), John Hatton Markham, Hugh J. C. Marshall, Charles Redford Merrison, Vibert Middleton (Newcastle-on-Tyne), Chas. Wm. Milburn (Newcastle-on-Tyne), Stanley Chas. Miles (Bournemouth), Ewart Gladstone Millar, Christopher John Monson (Newark), Andrew Muir (Edinburgh), Ernest Ranson Mundle (Newcastle-on-Tyne), Harold Franklyn Murrell, Edw. Robbins Nixey (Hartlepool), Robert Douglas Ogden (Manchester), Basil Oliver (Sudbury, Suffolk), Geo. Wilfrid Page (Bolton), David Parkhill (Belfast), Claude Paterson (Bowdon, Cheshire), Basil Pendleton (Manchester), Leonard Pierpoint (Warrington), Montague Corry Pile (Newbury), Claud Vincent Ponder (Eastbourne), Albert Reginald Powys (Somerset), Harold Oswald Prestwich (Lancashire), Henry Melancthon Pritchard (Cardiff), Mowbray Procter (Hartlepool), Edgar Quiggin (Liverpool), Thos. Herdman Rae (Sunderland), Frederick Raine (Newcastle), L. A. G. L. Rawles, G. R. H. Reaney, Thos. Edgar Richards (Cardiff), Thomas Morgan Richards (Penarth), Fredk. Gibbon Richer, Wm. Ewart Roberts, Wilfrid Robson (Saltburn), Wm. Herbert Rogers, Percy Havery Ross, Samuel Runcie (Glasgow), Tom Sadler Rushworth, Herbert Ryle (Newcastle), Hayward Lewis Samson, Henry

Partridge Sanders (Cardiff), Victor Geo. Santo (Bromsgrove), Lawrence Scantlebury (Launceston), Jesse Francis Schneider, T. T. G. Donaldson Selby, Christopher Long Sharp (Blackpool), James Hughan Shearer (Exeter), Isaac Taylor Sifton, Harold Slater (Blackburn), H. R. G. S. Smallman, Neil Campbell Smith, E. T. L. Smith, Robert Ernest Stewardson, George Marrison Stone (Tuxford), H. S. Walcott Stone (Taunton), Charles Stonehouse (Blackburn), Percy Ripley Strong, John Towneley Sugden (Manchester), Harry Cecil Swindells (Manchester), John Wm. Thorpe (Lytham), Maurice Tobias, Alfred Nicholson Tucker (Plymouth), Percy Turner (Bradford), James Irving Tweedie (Annan), James Henry Vaughan (Newport, Mon.), Louis Charles Veale, Francis Guilford Waddell-Dudley (St. Albans), Richard Arthur Waite (Bradford), H. H. J. Walder (Southampton), Marshall Eyre Walker, Samuel Wallis (Kettering), William Ernest Watson (Greenock), Harry West (Newbury), John Charles Whettam (Weymouth), Thomas William Whipp (Scarborough), Herbert Hodges Whittington, William Whymper (Framlingham), Arthur Gilbert Wood (Stoke-on-Trent), Henry Edward Woodsend (Nottingham), Alexander Lionel Woodward, Henry J. Wyeth, Reginald William Yates (Huddersfield), Henry Young (Bedford).

Intermediate (in order of merit).—Andrew Rollo, Clement Stretton (Leicester), Chas. Thos. Palmer, Leonard Wm. Ensor (Huddersfield), Sidney Hall Goodwin, Reginald Percy Chamberlain (Leicester), Norman Austin Leech, John Swarbrick (Manchester), John Brown (Northampton), Francis Robt. Boyd Haward (Great Yarmouth), Leslie Patrick Abercrombie (Manchester), Edwin Osman Payne, Percival Wm. Hawkins, James Miller (Sheffield), Frank Edw. Stratton (Salisbury), John Norman Randall Vining, Arthur Tedman (Bristol), Wilfrid Stonehouse Payne, Wm. Steel (Sunderland), Willie Hemingway (Bolton), Henry Makins Tait (Glasgow), Charles Frederick Ward (West Bromwich), Arthur Haynes Johnson (Winchester), Archibald Lawrence Holder, Geoffrey Goodwin Moorhouse (Liverpool), Guy Church, Sir Francis Chas. Rupert Ford, Bart. (Ilkley, Yorks.), Geo. Lister Thornton Sharpe, Geo. Herbert Jackson (Boscombe), James Morton Lethbridge, Basil Procter (Newcastle-on-Tyne), Fergusson Barclay (Weston-super-Mare), Henry D. Crewdson, Wm. Herbert Hobday, John Parlett, Geo. Maurice Roe (St. Leonard's-on-Sea), Godfrey D. B. Shepherd, Wm. Peter Steel (Sidcup), Victor Wilkins, Arthur A. Williamson (Dundee), Robert Gordon Wilson, jun. (Glasgow), Archibald Herbert Winterburn.

Final and Special.—Samuel Chesney (Stourbridge), Geo. Edward Clay, Chas. Heaton FitzW. Comyn, Harold Cooper (Blackburn), Chas. Archibald Daubney, Wm. Ernest Emerson, Jas. Ernest Franck, Arthur Reginald Groome (Manchester), Herbert Haines, Emanuel Vincent Harris, Frederick Milton Harvey (Gorleston), John Stanley Heath, Percy Erskine Nobbs, M.A.; Sidney Vincent North, Cyril Wontner Smith, Wm. Herbert Swann, Alexander Symon, Andrew Mitchell Torrance, jun, Robert Percival Sterling Twizell (Newcastle-on-Tyne), Charles Edward Varndell, Clyde Young.

A SEVENTEENTH-CENTURY PLAN.

IN the collection of Mr. E. R. Wodehouse are a few plans or maps of some importance. The principal one is on two sheets of vellum, originally joined together, and was drawn about 1680, its title being as follows:—"The Description of the Town and Fields of Little Riburgh in the county of Norfolk. All those lands covered with yellow were of the Rectory; the pricked lines signify the meeres and the black lines ditches and enclosures; nat. for copyhold and lb. for free; h. for Hempton; f. for St. Faith's; w. Woodhal; c. Creak; ca. Castleacre; and p. Pavelyes."

Besides these abbreviations there occur "Dns." and "R. B.," both written in red ink on many of the divisions, but not explained. The names of the tenants are also given. They were few in number, and most of them held both freeholds and copyholds, the latter being more numerous than the former, Their houses are shown altogether near the centre of the map, at some distance from the church. There are several highways through the fields. One of the acres was called Dovehouse acre.

This plan shows all the numerous divisions and subdivisions of the "common fields" very minutely, with the extent of each separate parcel of land. It is clear that the greater part of the arable land was originally divided into strips of about an acre each, but that some of them had been consolidated. The south side of the fields, however, towards "the Heath," is divided into much larger sections than the north side; in fact there are few traces of the single-acre system in that portion, which comprised the site of the manor of Woodhall (belonging to Sir Edmond Bacon), the site of the Rectory, Pavelyes manor and some of the demesnes. The inquiry at once suggests itself whether the lords of the respective manors had managed to obliterate the original landmarks, if there were such, by exchange and consolidation, or whether this portion consisted of lands "approved" from the waste subsequently to the construction of the common fields, either on the introduction of the manorial system or under the Statute of Merton.

With regard to the northern or larger portion of the fields an important feature of this plan is that it gives the names of the manors included in or extended into the township, and states to which of them each acre or larger parcel of land respectively belonged, and whether it was freehold or copyhold. From these particulars it is evident that the demesnes and tenements of the different manors were inextricably intermixed, so that there were no manorial boundaries, an interesting fact which is not illustrated by the maps published in Mr. Seebohm's "English Village Community."

On the back of this plan is a reference to the "Field Book." A book with this title, without covers, has been found and placed with the plan, with which it may be instructively compared. It gives a description of 31 furlongs and of the holdings in each, with numbers corresponding to those given in the map, but the names of the tenants are different, and it does not refer to the demesnes. Indeed, it appears to be of somewhat earlier date than the map, though of the same century, and to have been copied from a still earlier terrier, as the "Prior of Binham" is spoken of as a tenant in several places.

There are also two small plans of Stody and Harthill, on paper, showing the pasture close, the marsh, the sheepcourse, &c. (seventeenth century).

NATIONAL PORTRAIT GALLERY.

THE following gifts to the National Portrait Gallery have been accepted by the Trustees:—

"Edward, first Baron Thurlow, Lord Chancellor," painted in 1806 by Thomas Phillips, R.A., presented by Mr. Lawrence J. Baker.

"John Freeman Mitford, first Baron Redesdale, Speaker of the House of Commons and Lord Chancellor of Ireland," painted by Sir Martin Shee, P.R.A., presented by Mr. Algernon Bertram Freeman-Mitford, C.B.

"Sir David Ochterlony, G.C.B., the conqueror of Nepal," painted in miniature, probably by a native artist, presented by Mr. E. Lennox Boyd.

"James Henry Leigh Hunt," painted by Margaret Gillies, presented by the Rev. Canon Ainger, Master of the Temple.

"Edwyn Sandys, D.D., Archbishop of York, the celebrated reforming prelate, with his second wife, Cicely Wilford," painter uncertain, presented by Colonel Thomas Miles Sandys, M.P.

The large picture representing "George, Prince of Wales, and his brother, Duke of York, with their tutor, Dr. Francis Ayscough," painted by Richard Wilson, R.A., which formed part of the bequest made by Marianna, Lady Hamilton, to the National Gallery, and had been deposited in the National Portrait Gallery, was purchased at the recent sale of Lady Hamilton's portraits by Messrs. Agnew & Sons, and has been by them presented to the National Portrait Gallery, in order that it might resume its place in the National Collection.

In consequence of the kind consideration of Mr. and Mrs. Edmund Gosse, the Trustees have been enabled to acquire the interesting portrait of Robert Browning, the poet, drawn in black chalks at Rome in 1859 by Field Talfourd, and forming the companion portrait to the drawing of Elizabeth Barrett Browning, already in the National Portrait Gallery.

The Trustees have also acquired by purchase a curious portrait, representing Phineas Pett, constructor of the Navy to James I. and Charles I., with a view of the great ship, the *Sovereign of the Seas*, built by Pett, and launched in 1637. The picture appears to be, or at all events in part, the work of William Dobson.

DUNDEE INSTITUTE OF ARCHITECTURE.

THE executive council met on the 12th inst., Mr. G. A. Harris, vice-president, in the chair, and unanimously appointed Mr. James P. Bruce, architect, Dundee and Carnoustie, as president, in room of Mr. James Hutton, who had declined to accept office at the hands of the annual meeting. The resignations of membership by Messrs. T. M. Cappon, T. S. Robertson, James Sibbald, James Munro and W. Ryle Smith were received with regret and surprise at the reasons assigned for such a step. It was reported that five gentlemen had applied for admission as members, and being duly nominated, were elected, viz. Messrs. John Currie, Elie; B. C. Douglas, Dundee; D. B. Niven, Dundee and London; C. F. Anderson, St. Andrews; and D. F. Smith, Kirkcaldy. It was unanimously agreed to elect as honorary members Sir John Leng, M.P., Kimbrae; Rev. G. Mure Smith, Stirling; and Mr. John Strachan, Monifieth. It was agreed that an effort should be made to organise an excursion about the beginning of September, and that the opening meeting of next session should be conjoined with the opening lecture of the students' section.

NOTES AND COMMENTS.

It is not advantageous for children in schools to have walls without any variation in colour on which to rest their eyes. The London School Board have from time to time introduced illustrations from *The Architect*, which the pupils have found to be a relief. A further but almost as inexpensive a step is about to be taken. The works committee have had under consideration the question of improving the colour decoration in the interior of those schools which are now about to be repainted, and for this purpose the architect of the Board has submitted various specimens of proposed colours for distempering and painting, in connection with which it is proposed to provide a frieze moulding round the rooms. The committee think it desirable that, as an experiment, the proposals of the architect should be adopted in the case of one school to be selected in each division, the additional cost of carrying out the work being estimated at from 3*l.* to 4*l.* per room. As the contracts for carrying out painting work during the summer holidays have already been invited, and in some cases entered into, it is proposed to carry out this alteration as a variation on the contract in each case.

One class of classical archæologists consider the task undertaken by the Royal Academy of Berlin as among the most onerous and important to which scholars can devote themselves. About thirty years ago it was decided to prepare a more comprehensive collection of Greek inscriptions than had hitherto been attempted. Owing to its difficulty the progress of the work has been slow, and indeed there are some critics who conclude that the "Corpus inscriptionum Græcarum" will not be the property of the world any sooner than the dictionary of the French Academy. But there is one excuse for the Berlin scholars. Modern explorations in Greece have brought to light a vast number of new inscriptions, and some of them affect in a marvellous way those that were already known. Regardless of international jealousies and the rivalry between the learned of the two countries, the French archæologists in charge of the explorations in Delos and Delphi have allowed their German brethren to seek after inscriptions, and have placed those found during recent years at their disposal. About 5,000 new and important examples have therefore to be considered. It is also found that many of the inscriptions already possessed by the Berlin Academy will not bear the fierce light of modern criticism, and it has been found necessary to have them retested in Greece. The Berlin work is beginning to assume an international character, for the French explorers appear desirous to see the results of their own labour in the Berlin "Corpus" before they are published in Paris. The arrangement is satisfactory, and there can be no question that the German scholars will prove themselves worthy of the large trust placed upon them.

A custom among brickmakers, which may be local, was brought in evidence before Judge Martineau in the Worthing County Court on Monday. The first or head man of a gang of bricklayers sought to recover from a brickmaker of the district the sum of 2*l.* 10*s.* retained as "back-pence." It appeared from the evidence that the plaintiff was engaged to make bricks at the rate of 5*s.* 6*d.* per thousand. But the 6*d.* was retained when the weekly payments were made, which the judge considered was a security to keep the men at work until the end of the season. The plaintiff said he had been a brick-moulder for thirty years, and always understood he could give up the employment at a minute's notice. On behalf of the defendant it was stated the custom of retaining "back-pence" was long recognised in the trade, and when he was engaged the plaintiff was informed that the money would be kept until the end of the season. Judge Martineau said that the claim was unfounded and unjust. The plaintiff had left his work unfinished, and as 28,000 bricks were lying on the ground, if rain had fallen they must have become useless. Judgment was given for the defendant, with costs. A counterclaim for 8*l.* 15*s.* 6*d.* damages caused by leaving the work unfinished was not pressed. Men employed on brickfields are a peculiar class; they look on themselves as outside the law, and it was well, therefore, for the judge to have spoken so decisively about an absurd claim.

The Frauenkirche in Esslingen is a characteristic example of late German Gothic. The greater part of it may be taken as dating from the fifteenth century. It is, therefore, not pleasing to all purists, for they prefer the work of an earlier period, but it undoubtedly is a picturesque building, and as such merits every consideration. The surroundings of the church are no less antiquated. It is no wonder, therefore, that many think the church could be improved, and the town of Esslingen would gain in appearance if the building and grounds in which it stands were subjected to modern restoration. A very strongly-worded protest against the project has come from Professor Halmhuber, the Stuttgart architect. Unlike most opponents of restoration, he does not declare that in the nineteenth century builders are incompetent to equal the work of their predecessors in the fifteenth century. On the contrary, he admits the technical superiority of modern work, and when lines and surfaces are produced by machines they must come nearer to geometrical perfection than any handwork. But he objects to see the two classes of work brought into juxtaposition as if they were uniform in style and quality. He is no less emphatic in his condemnation of any meddling with the environment of the church. In England, where cathedral closes and old-fashioned enclosures have been preserved, the churches gain in interest. But on the Continent when a Gothic cathedral or church appears in the midst of a Place that more or less resembles the open spaces of French cities, the contrast is sometimes unendurable. The people of Esslingen-am-Neckar will do well to be guided by Professor Halmhuber, especially if they wish for the approval of tourists.

ILLUSTRATIONS.

LICHFIELD CATHEDRAL: WEST DOORWAY, MODERN RESTORATION

It has often been remarked that the principal doorways in English cathedrals are not comparable with those which are to be seen in France. The central doorway in the west front of Lichfield Cathedral was, however, an exception. Its extreme beauty offered a temptation to vandals, and we may conclude it was one of the parts which suffered most during the occupation by the Parliamentarians. The condition of the doorway in 1820 has been described by Britton as follows:—"It may be compared in some respects with the very elegant doorway on the south side near the east end of Lincoln Cathedral, which is nearly of the same style and period of erection. Both are peculiarly rich and fanciful, and calculated to excite the warmest admiration. The present doorway was profusely embellished with sculpture, foliage and figures running round the architrave mouldings and between the columns. These are now so much battered that not only their beauty is greatly injured, but it is almost impossible to ascertain the characters of some of the statues. The doorway is divided into two openings by a clustered column in the middle, to which is attached a figure said to personify the Virgin Mary. There are also two corresponding statues on each side of the door, standing on beautifully formed brackets and surmounted by equally beautiful canopies. Stukeley conjectures that these figures were meant for the Evangelists, and that two other statues on the outside of the doorway represented Moses and Aaron. These are destroyed, as well as their accompanying canopies, &c. The two doors are covered and strengthened with ornamental iron hinges or scroll-work, which appear to be original." In the restoration under Sir Gilbert Scott it will be observed that a figure of the *Virgin and Child* is placed under a canopy in the centre, as was no doubt the original arrangement. The figures on the side piers are *SS. Paul* and *John the Evangelist*, *Mary Magdalen* and *Mary, the wife of Cleophas*. The figures arranged to follow the lines of the architrave represent the genealogy of Christ according to the two Evangelists. In the central spandrel between the doorways is a figure of *Christ in Glory*. The present doorway may not correspond in detail with its predecessor, but there can be no doubt it is expressive of a similar spirit.

FIRST PREMIATED DESIGN FOR THE LIVERPOOL DOCK OFFICES: PERSPECTIVE VIEW. ELEVATIONS. PLANS.

(For Description, see p. 43.)

PRINCIPLES OF CONSTRUCTION FOR ARCHITECTURAL STUDENTS.

By E. WYNDHAM TARN, M.A.

(*Continued from last week.*)

III. *The Arch.*

IN the construction of an arch formed of stone voussoirs, as A B C D (fig. 4), we find that three mechanical principles are involved; these are the principle of the wedge, that of the inclined plane, and the principle of friction. The stones of an arch may be considered as truncated wedges, which are pressed together by their own weight and that of the load they have to carry, and the heavier this load is the more tightly will the stones be pressed together. The pressure, however, produces a reaction at right angles to the sides of the wedges and conveys a horizontal thrust to the supporting piers or walls, and if these are not strong enough to resist the thrust the joints of the voussoirs will open and the arch break up into pieces. The inner curve A C of the arch is called its intrados, while the outer curve B D is called the extrados.

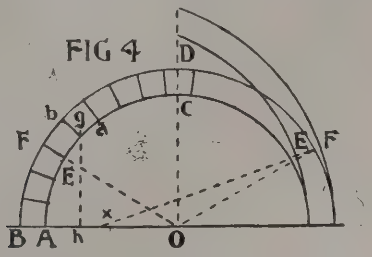
FIG 4

Commencing at the springing of the arch when the first voussoir is laid, its upper surface will form an inclined plane, and the next stone will tend to slide down this plane, and would do so if the surfaces were perfectly smooth and there was no mortar between the joints. But since the surfaces in contact have a layer of mortar between them, a third mechanical principle of friction comes in and acts as a force tending to prevent the sliding, and until the slope of the voussoir bed has reached an angle of about 37 degs. with the horizontal the upper stone will not begin to slide upon the lower one, so that up to the angle of 37 degs. the stones do not press upon the centring, but from this point the pressure on the centring begins, and goes on increasing in magnitude as the arch approaches completion.

If the vertical line *g h* dropped from the centre of gravity *g* of any voussoir falls outside its lower edge, as in the stone *b a*, the voussoir will have a tendency to turn over about that edge, and therefore will press more heavily on the centring. It is, therefore, advisable to make the stones of the arch as long as possible, in order that the verticals from their centres of gravity may fall within the outer edge in as many voussoirs as possible. It was probably with this view that some arches in the Cinque-cento style of Italian architecture were built with the voussoirs increasing in length from the springing to the crown.

When an arch is loaded with a heavy weight, such as a high wall, it has a tendency to flatten at the crown C D, causing the joints near that point to open at the intrados; consequently those at the haunches E F must tend to open at the extrados, and the joint at the springing A B to open at the intrados. The arch will, therefore, have a tendency to break up into four masses if the abutments are not sufficiently strong to resist the outward thrust.

In the semicircular arch we find that the joint E F at which the arch would break up by opening at the extrados is that which makes an angle of 30 deg. with the horizontal, or at one-third of the distance between the springing and the crown, measuring along the curve of the arch. This joint is therefore called the joint of rupture, and is that joint at which the horizontal thrust of the arch is greatest. In the segmental arch where the skewback makes an angle of 30 deg. or more with the horizontal, the joint of rupture will be at the springing.

In the pointed or Gothic arch the joint of rupture is lower down than in the semicircular arch, being that which makes an angle of 15 deg. with the horizontal in the equilateral arch, and increasing with the lowering of the crown. If we take the centre point, O, on the springing line, and draw a line O E at an angle of 30 deg. to the horizontal (as in the semicircular arch), we shall find, very nearly, the joint of rupture in any Gothic arch.

The position of the joint of rupture being determined in any arch, we have the key to the investigation of its stability, since it is at this joint that the thrust is greatest; and we can consider the whole of the horizontal thrust of the arch and its load to act at that joint, and can compare the thrust with the resistance offered by the supports. By this means we find that a loaded semicircular arch 16 feet span and 1 foot width of soffit, built with voussoirs 2 feet long, has a horizontal thrust at the joint of rupture of 25 cwts., and that if the pier is 10 feet high its thickness must be 5 feet in order to resist this thrust and secure stability to the structure. The height of the surcharge, or load above the crown, is here taken at 4 feet. In an arch of 28 feet span and 1 foot width, with a surcharge of 7 feet, the horizontal thrust at the joint E F is found to be 85 cwts., so that if the pier is 15 feet high its thickness should be 9 feet for stability. With a span of 40 feet, depth of voussoirs 4 feet, width 1 foot, and height of surcharge 12 feet, the horizontal thrust at E F is 185 cwts.; and if the pier is 25 feet high its thickness must be 14 feet for stability.

If, however, we increase the height of the surcharge we give greater stability to the pier, so that its thickness can be reduced, so long as the load is not sufficient to approach the crushing strength of the material with which it is built. When two arches spring from the same pier and are in line with one another, the thrust of one will be counteracted by that of the other if the spans are equal; but where the span of one is greater than that of the other, only a part of the thrust of the larger arch will be counteracted, and the remainder will be carried over to the further abutment of the smaller arch. In arches of similar construction but of different spans the force of the horizontal thrust acting at the joint of rupture is found to be proportional to the square of the spans; so that an arch of 14 feet span will produce twice the thrust of one 10 feet span, and an arch of 20 feet span will produce four times the thrust of one that is 10 feet span.

In the loaded equilateral Gothic arch for a width of 1 foot with a span of 10 feet, the horizontal thrust at the joint of rupture amounts to $8\frac{1}{3}$ cwts, with a span of 14 feet it is $19\frac{1}{2}$ cwts., with a span of 17 feet it is $27\frac{3}{4}$ cwts, and with a span of 20 feet the thrust is nearly 40 cwts.

In the first case, if the pier is 10 feet high, its thickness ought not to be less than $2\frac{1}{4}$ feet; in the second case, if the pier is 12 feet high, its thickness should be $3\frac{2}{3}$ feet; in the third case, if the pier is 15 feet high, its thickness should be nearly 4 feet; and in the fourth case, if the pier is 20 feet high, its thickness ought to be 5 feet in order to insure stability.

Parabolic or Tudor Arch.—The parabola is a curve whose radius of curvature increases in length from the springing, or which becomes more and more flat as it increases in length. This curve can be easily drawn when the height and span of the arch are given. Suppose it is required to draw a pointed Gothic or Tudor arch formed of two parabolic arcs, of which

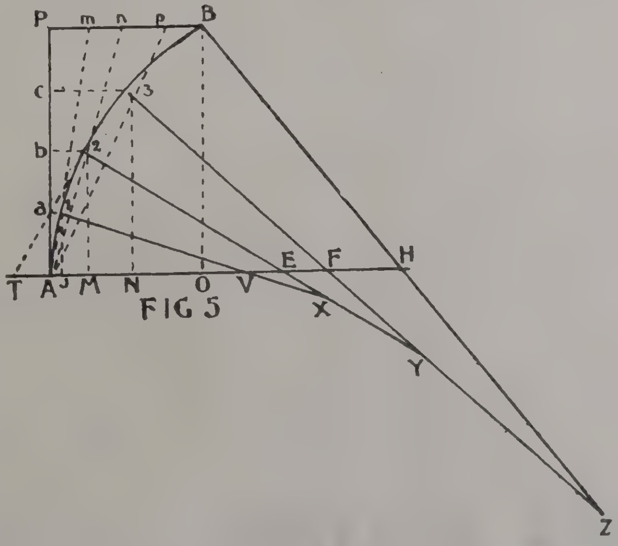
FIG 5

AP is the height at the centre and PB the half-span (fig. 5), AP and PB being drawn at right angles to each other; divide AP into any number of equal parts at *a*, *b*, *c*, &c., and also PB into the same number of equal parts at *m*, *n*, *p*, &c. From A draw the straight lines A*m*, A*n*, A*p*, &c., and also draw the horizontal lines through *a*, *b*, *c*, &c., intersecting the first set in the points 1, 2, 3, &c.; then these points will be upon the required curve which can be drawn through them by hand. By using two equal and similar portions of this curve turned in opposite directions, we can obtain the outline of any Gothic arch we please.

It is usual, however, to draw this curve approximately by means of a series of radii gradually increasing in length, and the larger the number of radii used the more nearly will the resulting curve resemble the true parabola. Draw the horizontal line AH, and from the point 2 on the curve drop the perpendicular M2; take AT equal to AM and draw the tangent T2. Draw the normal E2 at right angles to the tangent, then ME is the subnormal and is the same for every point on the curve. Drop the perpendiculars J1, N3, OB, on AH, and take JV, NF and OH each equal to ME; draw V1, F3 and HB, which are the normals at those points on the curve; with V as centre and radius VA draw the arc A1; produce V1 to meet E2 in X, then with X as centre and X1 as radius, draw the arc 1, 2. Produce E2 to meet F3 in Y, and with centre Y and radius Y2 draw the arc 2, 3. Produce F3 to meet BH in Z, and with Z as a centre and Z3 as radius draw the arc B3. Then the whole curve AB will be a close approximation to a parabola. The practice has been for the architect to employ only two radii to each half of the arch, which has therefore been called the four-centred arch, of which fine specimens are to be seen in the roofs of King's College Chapel at Cambridge and the Chapel of Henry VII. in Westminster Abbey. In the Tudor period this arch was always of comparatively low pitch, that is to say, the height at the centre was less than the half-span. It is probable, however, that Gothic arches of high pitch were formed in this way long before the Tudor period, as, for example, those of the nave of Westminster Abbey. Looking at these arches from the "triforium" many years ago, the present writer was struck by the apparent variation of their curvature, which showed that the sides were not formed of single arcs of circles. Having mentioned the observation to the architect of the Abbey (then Sir G. G. Scott) and recommended that an exact measurement of the arches should be made, Sir Gilbert confirmed his opinion and considered that the arches were four-centred.*

In the parabolic arch the joint of rupture is very little above the springing line, and the thrust may therefore be taken as acting at the springing without material error. Suppose the height of a Tudor arch to be equal to one-third of the span, which is 18 feet, the height being 6 feet; then the horizontal thrust of a loaded arch for every foot of width will be 28 cwts. acting at the top of the pier; and if the pier is 10 feet high its thickness should be 5 feet in order to insure stability.

Suppose the arch to be of the same span, but 15 feet high at the centre, then the horizontal thrust for each foot width will be 26 cwts., and a pier 10 feet high will not require to be more than 3½ feet in thickness.

Elliptical Arch.—Where the intrados of an arch is an ellipse the joint of rupture meets the intrados half-way between the springing and the crown, measuring vertically. Thus in an arch of 20 feet span and 5 feet high at the centre the joint of rupture will meet the intrados 2½ feet above the springing; and if the voussoirs are 2 feet long, and the load on the arch rises 2 feet above the crown, the horizontal thrust at the joint of rupture will be 36 cwts. for every foot width. If the pier is 10 feet high we find that it should be 7 feet thick for stability. In the semicircular arch of the same span the thrust at the joint of rupture is 25½ cwts., but acts 2½ feet higher than in the ellipse, consequently its leverage about the base of the pier is so much greater; and a pier 10 feet high should have a thickness of 6 feet for safety.

Depth of Voussoirs.—In a loaded semicircular arch, 20 feet span, and having voussoirs 2 feet long, the pressure on the joint of rupture is 12,200 lbs. for every foot of width, while the safe load which Bath stone will sustain is three and a half times as much; consequently there need be no fear of crushing taking place, even if the depth was reduced to 7 inches. But if the arch is built with stock bricks the depth of the voussoirs must not be less than 14 inches for safety.

In the case of a loaded arch, 40 feet span, built of Bath stone, the depth of the voussoirs need not exceed 32 inches; but if stock brick is used the arch should consist of seven rings of 9-inch brick. If Portland stone is used the depth of the voussoirs need not exceed 16 inches for safety.

(*To be continued.*)

GLASGOW CATHEDRAL.

THE frequency of inexact statements about the improvements and alterations completed in Glasgow Cathedral in 1890 has turned my attention, says a correspondent of the *Glasgow Herald*, to the notes which I happen to possess on the subject. There is no official record of the changes available to the future historian of the cathedral, and the heated discussions which arise from time to time concerning features of the cathedral fabric make it desirable that some accurate word should be left concerning the partial restoration of 1890.

The improvements were really the conclusion of a movement which began when the handsome organ by Willis was presented to the cathedral by Dr., Mrs. Burns and family in memory of Miss Frances Grant, a daughter.

The condition of the choir—the part of the church in which the congregation worshipped—did not stand comparison with the music in the sixties. At that time there was a cultured and wealthy congregation, but ideas about the fitness of things in church, which have since become abundant, were sadly absent. As an example of the unfitness of things, the late Dr Burns used to tell with some amusement that an ordinary filler with a cork pushed into the bottom and set into the neck of a water-bottle was considered to be an adequate baptismal font for the cathedral of Glasgow. "Yet," mused the doctor, "some good people could see nothing wrong." The bogey of "High Churchism" was so present to every layman when any reform was suggested that a forward step was always beset with obstacles.

The Town Council of Glasgow has been honoured with the credit of the improvements. I find that, at the request of Dr. Burns, they merely gave a grant of 100*l.* towards the expense, but that otherwise they had nothing to do with the changes. The Government authorities gave their sanction to the improvements, but no financial help. The complete work was carried out and all the money raised by Dr. Burns and Mr. Thomas Lightbody, banker, one of the elders in the cathedral, and they associated Mr. John Honeyman, architect, with them for the practical part of the scheme. The money was raised and the work carried out without any advertisement, in the quiet and modest way which Dr. Burns ever favoured.

The arrangement of the cathedral before the alterations was most unsuitable for semi-state functions, public marriages or the celebration of municipal or other events. This fact was really the moving cause of the improvements. A great deal of foolish speculation has been hazarded as to whether the design of the promoters of the alterations was to adapt the cathedral to an Anglican or a Greek model. One may say now, with some chance of being believed, that the design was merely to adapt the choir for the seemly celebration of the Sacraments and public worship, and to make the church suitable for all the public functions that rise out of the municipal and social life of the city. There was not the slightest High Church motive in the changes, and one regrets to have to put the fact on record.

Nobody now would stand up as an apologist for the old arrangements in the cathedral. There was the old wooden platform with the long side benches, the pulpit in the middle of the choir towards the east end, blocking the vista and rendering it necessary for the clergy to steal into their places from behind, as if not quite prepared to face the congregation, and making it impossible for anyone facing the pulpit to see more than the head and shoulders of some distinguished preacher whom he might have come a distance to see. During a well-attended service this platform used to be invaded by the crowd, and the clergy had often to push and elbow a way to their places or pick their steps among umbrellas or overcoats laid down in their path.

A chair and somewhat plain table were set in front of the pulpit, and at ordinary services the reader took his seat in the former. The plain table was all the communion-table of the metropolitan church of Glasgow. No wonder strangers marvelled at the ecclesiastical taste of Glasgow citizens. The writer has heard of an American visitor who said, pointing to the simple table, "Now, I bet there isn't a merchant in your city who hasn't a better table than that to eat his dinner from."

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* A photograph of these arches is given in *The Architect* for March 16, 1900.

One distinguished LL.D. used to rail at the responsible clergyman for having the ugliest interior and the finest exterior of any church in Scotland.

One remembers with shame now the bitter criticisms of those who tried to discredit the efforts of the gentlemen whose desire was to make the interior of the cathedral worthy of Glasgow. It was insinuated that the alterations were inspired by the Church Service Society. Those criticisms and the memory of the old pulpit intruded into the middle of the choir forced the late minister of the cathedral to such declarations as "This place was meant for devotion and worship, and not to be a mere lecture-room or place of entertainment."

The difference between the taste of the past era and the present is well illustrated by the present cathedral pulpit. Most people, looking on it as it now appears, imagine that it is part of the new work; but it is not. It is the old pulpit somewhat changed. Everybody knows the weakness that our fathers had for covering carved stone with plaster and carved wood with paint. The pulpit with its natural finish leaves nothing to be desired; but formerly it was thickly coated with shining varnish. Some quick eye noted that the pulpit was a good example of "painting the lily," and, therefore, during the improvements it was well scraped, and the effects of the varnish brush removed. The result was even better than expected, and it was thought worthy of its place with the modern carving.

The shifting of the pulpit to its present position by the massive pillar has helped the congregation to hear in all parts of the building, a result not always attained when it stood in the centre of the choir.

The exact total of the cost of the improvements can scarcely be given, owing to the modesty of certain donors, who defrayed the cost of their gifts apart from the audited accounts. As far as known, however, the total expended on the improved interior, including the cost of the organ, amounts to 6,200*l.* This does not include the cost of the lighting, which was carried out by the Council.

The preparation of the choir for the new arrangements, the erection of the carved stalls, the seating in front of the eastern aisle, and the providing of sundry fittings cost within a few shillings of 800*l.* Necessarily the carver's account gave the largest item to this amount. When the improvements were completed general satisfaction was expressed at the index which they afforded of the state of the wood-carver's art in Glasgow. Architect and carver blended their skill happily to produce carved work which is at once ornate and yet in good taste and in sympathy with the somewhat severe Gothic of the cathedral.

The communion-table is a model piece of work. Excepting the panel representing the Supper, it was all built and carved in Glasgow. It was the gift of Mr. John Garroway, of Rosemount. When this table was being designed Da Vinci's representation of the Last Supper was suggested for the front panel, but ultimately the choice of the donor fell on a less-known representation by, if I recollect, a Dutch artist, and it has been universally admitted that the choice was a happy one.

A remark made concerning this table by a country elder completely turned aside the external hostility with which the improvements were here and there assailed. Shortly before the table was presented a cry had been raised by certain people against the "images" in St. Giles. It was expected that the iconoclasts of the West would have something to say about this representation of the Lord and the disciples. Indeed, after the table was put in its place various anonymous and threatening letters were sent to the minister of the cathedral. Accordingly a certain week-day service was looked forward to as likely to afford opportunity for some demonstration. The service concluded with only a slight attempt at disturbance, but as soon as it was over a representative of the iconoclasts walked straight up to the beautiful table, and began to examine the carved panel with eyes and fingers. Somebody said to an elder from the country, pointing to the individual at the communion-table, "What is he going to do?" "Oh," replied the elder, with undisguised scorn, "he's trying the heids o' the disciples to see if they're as saft's his ain."

In the original scheme of the improvements the paving of the raised part of the choir was in a very unambitious style, as the funds available did not permit of anything elaborate. When Mr. William Gilfillan, one of the citizens, came to know of the intention to pave this part he handsomely came forward and offered to perform the work with the best material that he could find. It was one of those public-spirited offers that merited more than passing attention, because it was a spontaneous act by a comparative stranger to the cathedral. It resulted in the beautiful tesselated marble pavement, which has given the citizens a chance of a comparative study of marbles from every quarry or district of note. It may be interesting to students of pavement work to know that the tesselated tile-work in front of the raised part of the choir is after an example in Salisbury Cathedral. The reredos, or more properly in the circumstances, the screen of Caen stone and alabaster which finishes the raised part of the choir, was gifted by Lady Maxwell, of Calderwood, in memory of the late baronet. By itself it is a magnificent piece of work, if just a little too decorated in style for the rest of the building. The ancient screen in this part of the choir is supposed to have been much lower than this one. If the old architects really intended the eastern end of the choir to be a chapel, the present height of screen is architecturally correct, but if it is the east aisle of the church, as some maintain, then a lower screen would have been in better form. However, skilled men have decided, and the general excellence of the work almost makes it ungracious to criticise their efforts to give us something more worthy of the first church of Glasgow than we formerly possessed.

The lectern will be remembered by all who remember the Glasgow Exhibition. It is a highly artistic bit of work, and was selected by the cathedral congregation for a present to the late Dr. Burns when he reached the twenty-fifth year of his ministry in the cathedral. Dr. Burns re-presented the gift to the cathedral, that it might rank among the improvements.

The great Bible which was presented to Dr. Burns on the same occasion by former assistants has, since, by the kindness of Mr. George Grant, become the property of the cathedral.

The improvements have now vindicated themselves to the taste and devotional sentiment of the citizens, which only makes one more thankful for the energy and public spirit of the two gentlemen who initiated and worked out the scheme. The result has been the removal of one more blemish from the face of public Glasgow.

THE LIVERPOOL DOCK OFFICES.*

THE following is the report of the joint architects, Messrs. Briggs & Wolstenholme, F. B. Hobbs and Arnold Thornely, on their design:—To the Chairman and Members of the Mersey Docks and Harbour Board.—Gentlemen,—In response to your invitation, we have pleasure in submitting the accompanying scheme for the proposed new head offices, illustrated by the following drawings:—1, Basement plan; 2, ground floor plan; 3, first floor plan; 4, second floor plan; 5, third floor plan; 6, fourth floor plan; 7, block plan; 8, elevations; 9, sections; 10, detail of elevation; 11, perspective view. We have endeavoured to make the drawings self-explanatory, and therefore consider a detailed description of the various departments to be unnecessary.

Space occupied by Building.

In dealing with the site at our disposal we have effected a saving of 12 feet along the east boundary, and also set the building back on the south and west fronts. We have not followed the building line on the west side, as we consider it preferable that the building should be rectangular in form. The land thus available, in addition to that specified to be left for ornamental grounds, provides a space capable of being treated more effectively than would otherwise be the case, and also enables us to provide an easy access for carts under the main building to the areas within for the supply of heavy goods generally.

Entrances.

The main entrance is placed on the south-west front, the roadways on the south and west boundaries being the most important thoroughfares. Ample entrances have been also provided in Brunswick Street and the proposed new street on the east side. We would draw special attention to the manner in which the three entrances converge by spacious and well-lighted corridors to a central hall, from which the various floors would be served by the four passenger lifts. The grand staircase is placed between the central hall and the main entrance hall. By this arrangement the lift attendants are able to superintend the whole of the corridors and easily direct the traffic on each floor, thus reducing to a minimum the usual difficulty the public have in finding the various departments in a building of this magnitude. A further advantage of this plan is that the various departments are self-contained, and that access to all of them (with the exception of a few of the single rooms on the second floor) is obtained by direct approach from the hall or corridors without the necessity of passing any other department, thus considerably reducing the length of corridors. We would point out that by this arrangement of central corridors we are enabled to provide windows on each side of all the large offices of the various departments, an undoubted advantage both for effective lighting and ventilation. The concentrated arrangement of the hall and staircase will undoubtedly give a spacious and dignified appearance to the interior of the building.

Lavatories.

The lavatories for principals, clerks and lady typists are grouped in a central position on each floor, and within easy reach of the various departments. A ventilated lobby separates each from the corridors. The whole of the drainage is concentrated by this arrangement.

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* See illustrations.

The Departments.

We would emphasise the following points in the various departments :—

(1) *Rates and Dues Departments.*—The manner in which this most important department has been planned enables us to obtain in the fullest degree ready ingress and egress from the streets. Two direct entrances from the street are provided, in addition to that communicating with the entrance hall. With this same object in view, we have thought it advisable to make the floor of the general office only 4 feet above the street level, which also gives an additional height of 3 feet to this office, increasing its height to about 19 feet. The difference in the floor levels also enables the principal to overlook the whole department from his private room. The whole of the clerks are placed in one group behind the counter, which facilitates intercommunication between the subdivisions of this department.

(2) *Harbour Master's Department.*—Graving Dock Offices : We have kept the floor of the graving dock office within 1 foot of the street level, and provided a separate entrance for the public using this office. (3) Board and Committee-rooms : A separate cloak-room and lavatory has been provided for the members of the board. (4) General Manager and Secretary's Department : Stationery superintendent : A room has been provided in the basement for receiving and unpacking heavy cases of stationery, &c., with a lift communicating direct with a store-room on a mezzanine and the office on the first floor. (5) Check Office : The general office has been made sufficiently large to accommodate a series of racks for the large number of papers which accumulate in this department. (6) Marine Surveyor : The drawing office, which faces north, provides ample space for the exceptionally large table required for the charts made in this department. It has been thought advisable to provide a plan and record-room, and also accommodation for chains and surveying instruments generally. (7) Strong-rooms : It will be observed that in most instances the entrances to these rooms have been arranged to lead out of an ante, so that when the doors to strong-rooms are open the rooms will be lighted by the window opposite. We have taken advantage of the height available to provide a mezzanine floor over some of the strong-rooms, where books and papers, which are not in daily use, may be stored.

Spare Office Accommodation.

Although the instructions and conditions issued "suggest" on page 7 that the buildings should consist of six floors, exclusive of the basement but including the ground floor—the fact that the second floor departments require little more than half of the superficial area of the first floor, and that nothing is said in the instructions as to the remaining space on the second floor being available for future additions to the staff—we take it that the two entire floors of the building, viz. the third and fourth referred to in your instructions, are presumably to be of an equal area to that required by the departments of the second floor. We have, therefore, been able to provide on the second, third and fourth floors more than an equivalent to the two vacant floors asked for, thus making the building five storeys high. The superficial area of the vacant floors that we have provided (exclusive of the provision suggested by us for keeper's house and stores on fourth floor) amounts to 66,250 superficial feet. If further space, however, is required for vacant offices, a sixth floor could easily be provided by placing two storeys in the roof without materially altering the design. The arrangement we have adopted has also this advantage—that the building above the first floor facing Brunswick Street and the new street need not be built until the accommodation is actually required. There would still be vacant offices on the third floor equal in area to the second floor departments, as well as some available space on the fourth floor. The appearance of the building as seen in the perspective view would not be affected.

Style.

The style adopted in the design of the building is that of the late English Renaissance, treated in a simple and dignified manner. The two towers flanking the main entrance form prominent features in the design. The treatment of the interior of the building has been designed in harmony with the exterior.

Heating and Ventilating.

Heating.—The heating throughout would be by means of low-pressure hot-water pipes leading from boilers placed in the basement. Radiators would be fixed throughout the building in convenient positions. The system would be divided into sections. A spare boiler is shown for use in case of emergency. The principals' private offices would have fireplaces in addition.

Ventilation.—The planning of the building lends itself to an easy and efficient system of ventilation. As previously mentioned there are windows in the opposite walls of all the large offices. Warm fresh air would be introduced through the radiators. The extraction of the vitiated atmosphere would be accomplished by means of an electric fan placed in each of the towers and turrets at the angles of the building ; these would be connected with a main air duct formed in the roof. This main air duct would again be connected to the rooms on the various floors by brick flues built in the chimney-breasts and other portions of the building where the thickness of the walls permitted it, and elsewhere by flues formed of galvanised steel flush with the face of walls in chases left for the purpose. Into all these flues, immediately below the cornice, panels would be placed as outlets for the vitiated air. The lavatories would be similarly ventilated into the special air flues built around the smoke flues, and kept absolutely separate from the general scheme of ventilation, the position of the lavatories facilitating this provision. Due provision would be made in all cases for the regulation and proper control of the inlets and outlets in the various rooms. The admission of the fresh air would be, as before described, through radiators with supplemental air inlet panels. These air inlet panels when closed would be flush with the wall, and could be opened to any angle to admit the desired volume of air. The air admitted both through radiators and panels would be filtered.

Drainage.—The concentration of the lavatory blocks in the centre of the area allows of a very simple system of drainage ; manholes are provided at every change of direction and proper ventilation secured to every length.

Materials.

We propose that the whole of the frontage of the building be faced with specially-selected stone from the Grinshill or Darley Dale quarries. The walls of the areas would be faced with Aston Hall buff bricks, the size of the areas making it unnecessary to use white glazed brick facing. The roof to be covered with green Westmoreland slates. The walls of ground-floor, halls, corridors and entrances to be lined with marble. The architraves, arches and jambs to doors and windows to be of polished Hopton Wood stone. The columns to staircase and halls to be of red polished granite, the steps and landing of staircase to be of granite, supported by steel joists. The balustrades to be of Hopton Wood stone. The walls of landings and corridors to the upper floors to have faïence dados, the upper portions being finished in plaster.

Walls.—The walls of the principal public offices to be finished in plaster with dados of faïence. The committee-room and principals' private offices to have dados of polished mahogany. The board-room to be panelled to underside of cornice with polished mahogany. The pilasters and columns to be of alabaster. The cornice, panelling above same, and ceiling to be of fibrous plaster. The lavatory walls to be covered with glazed tiles throughout, the divisions between closets being built of glazed bricks.

Floors.—The floors throughout to be of fireproof construction. The steel joists would be protected either by concrete or adamant blocks. The steel stancheons supporting the main girders would be encased with coke breeze concrete, finished with faïence in the principal rooms. The surface of floors to hall, corridors and lavatories to be finished with terrazzo or other similar material. The floors of offices to be laid with dovetailed maplewood blocks.

Roof.—The roof principals and purlins would be constructed of steel encased in coke breeze concrete.

Foundations.—We propose to carry the foundations down to the rock in all cases by means of cement concrete piers, as shown on the sections.

Cost.

We estimate the cost of the building as follows :—

Foundations.—The cubical contents of the foundations measured from the surface of the rock to within 2 feet of the basement floor amounts to 1,700,000 feet. Pricing this at 2*d.* per cubic foot, the cost works out at 14,166*l.*, or about 2*l.* 12*s.* 6*d.* per superficial yard of the portion covered by the building. Towards this amount of 14,166*l.* a sum of at least 1,000*l.* could be obtained by charges being made to contractors for permission to use the available space as a tip.

Superstructure.—The cubical contents of the whole of the superstructure measured from 2 feet below the basement floor to half-way up the roof, including all towers, chimneys and other features, amounts to 4,339,242 cubic feet. Pricing this at 1*s.* 1½*d.* per cubic foot, a figure at which we are of opinion the work could be executed, the cost is 244,080*l.*

The total cost is as follows :—

Foundations—		
1,700,000 cubic feet at 2*d.* per cubic foot .	£14,166	
Less amount obtained from contractors, say	1,000	
		£13,166
Superstructure—		
4,339,242 cubic feet at 1*s.* 1½*d.* per cubic foot . .		244,080
Total cost		£257,246
(Including areas and parapet walls.)		

Referring to the suggestion made previously in the report as to the manner in which a portion of the spare offices could be built hereafter, if this proposal were adopted the cost of the building would be reduced by 47,000*l.*, making the first cost 211,246*l.* In regard to the clause in your conditions as to the economy to be borne in mind in designing the building, we have relied upon simple and straightforward methods of planning to bring about the desired result.

INDIGENOUS AND INVENTIVE ARCHITECTURE.*

ONE of the purposes of this organisation, as expressed in your constitution, is "to encourage an indigenous and inventive architecture, and to lead architectural thoughts to modern sources of inspiration."

In commenting upon the manner in which such purpose shall be attained, in the hope that my point of view may not be without some value, I shall assume that the indigenous and inventive qualities in our architecture will, when obtained, appear in its style. Next, I propose to indicate, as clearly as I am able to do, the nature of this quality called style, and then I shall take up the words "indigenous" and "inventive" in their order, and attempt to show how, in my opinion, we can best go about to attain to an "indigenous and inventive architecture" in America.

The nature of an architectural style is closely akin to the nature of the personal style of an individual. In the case of the individual it is, of course, the result of his continued endeavours to improve his character. In doing so he does not ape someone else, neither does he discard the example of heroic types that have lived before him, or who are living in his own time. He attempts to discover the laws which ruled or rule such lives, and endeavours to follow similar laws in arranging his own conduct.

In much the same way is style in architecture evolved. We are not to copy past styles, neither are we to consider them useless as modern sources of inspiration. We are to try to discover the laws which govern their success, to discern how those laws should be modified to suit existing conditions, and then to apply them in the solution of our own problems. The result will be beauty, the exact nature of which we may not be able to define, but like the quality in a man of which he is unconscious, but which others feel to be his personal atmosphere or style, it will be all the more vital and all the more precious because defying analysis.

In attempting to discern the modifications to be made to the laws which governed the success of past styles we are to consider, first, our increased complexity of material requirements over those of past ages, brought about by an advanced social condition; and the means of satisfying such increased demands afforded us in approved methods of construction and in new forms of building material. We are also to consider that in all ages artists have drawn upon the work of their predecessors in seeking for inspiration, and that we are particularly fortunate in having more of such precedent to draw from, and in being provided, through the art of photography and through facilitated travel, with much readier means of access to it.

These are some of the considerations that should be incorporated as modifications of the laws which governed the success of past styles, and of the laws which we are to apply as aids in evolving a style of our own.

Now, how can we best go about to attain to an "indigenous" architectural style in America? What should be our sources of inspiration in aspiring to it? Are we, in seeking for them, to expect that they will appear only in things which refer to a building's external adornment? And even so, would we in an appreciation of the beauty of all the architectural ornament of other times, and of our many facilities for enjoying it, be likely to express such appreciation in our art, did we reject as sources of inspiration all things not American? Surely not. The sources of inspiration for an indigenous style of American architecture are not thus limited. Style is not the external adornment of a building; it is the vital quality of it which has resulted from conditions inherent in its making, and which include situation, cost, material requirements, the constructional means available for meeting those requirements, and the ornament with which it was thought fitting to clothe it.

As the modern sources of inspiration for an indigenous style of architecture in America lie in a perception of the possibilities of the sites of our structures, in a knowledge of the most advantageous method of disposing the money available for their erection, in the insight which shall discern the vital offices buildings should fulfil and the manner in which they should fulfil them, in the familiarity with the building methods and building materials best adapted to accomplish such fulfilment; and finally in all things which suggest the forms of ornament most fitting for the purpose of adorning our structures.

And now how can we have an "inventive" architecture for America? That is, a new architecture, one that did not before exist; an architecture that shall be not only distinctly American in its style, but that shall also be new in its style?

In an address before the Boston Architectural Club in October 1893, Mr. Robert D. Andrews said:—"I think it is the custom nowadays to put our conscious effort in the wrong place in the treatment of art. We put it at the end, when it ought to be at the beginning. We elaborate our superstructure, but treat the foundation as of little account." I believe that custom still prevails.

The poets never tire of calling our attention towards the unity of life, towards the intimate relation all living things bear to one another, and towards the fact that this relation is a far more intimate one than we generally feel it to be. Scientific research in all its ablest conclusions emphasises the same point, insists upon the oneness of all nature and all life; upon the fact that each plant in nature is not a self-dependent organism, but that its health and its life is governed by a force which controls and sustains all living objects; upon the fact that a man is not an independent organism, but that, whether he is conscious of it or not, his fortunes are governed by a higher ambition than his own; though he is given free will to choose between the good and the bad, his final destiny will rest upon obedience or disobedience to physical, moral and spiritual laws over which he has no control.

Now art—that is living art, true art, art that is not merely a thing of dead forms and formulas—is one of the most potent expressions of human life. It is the conversation culminated in material form of all the artist has had of knowledge, of skill, of experience, of character, and it is subject to the same laws which govern life, and is a part of the same great unity; so that by ascertaining how those laws operate in the production of new things, of inventive things in nature or in life, we shall also see how they operate in the creation of new things in art.

In nature we find that a plant produces in leaves, flowers and fruit only that which it has been able to draw in another form from the earth, the sun and the air, and that its perfection and distinction of type is directly dependent upon the success with which it obtains such nourishment in qualities and quantities suited to its particular needs. And in life we know that a man can give out only that which in another form he has previously taken in, and that the distinctness of his individuality and the value and amount of his productiveness will directly depend upon his knowledge of the sources of power which best sustain him, and upon his obedience to the laws which govern his nature.

And so it is in art. For the artist is not an independent worker, having supreme control over the quality and number of his creations. He is a part of a divine order of life, from which all his efficiency springs, and the originality and sustained excellence of his work depend upon the degree to which he becomes conscious of his relation to that order, and upon his recognition of and obedience to its laws in their application to his life.

Now, the application of universal law which governs the life of an individual artist each artist must discover for himself through the process of living, but some of the laws themselves, in their wider bearing upon all artists' lives, may here be briefly enumerated. The artist, then, is first a man, and is to know himself and the world; that is, he is to recognise the natural equipment for work with which he has been endowed, the degree and nature of its power, and also its limitation, and he is to try to discover the place it should occupy in the world's entire economy. As a man, he is also to recognise the importance of the physical side of his being, and he is to see that it is kept in the highest condition of efficiency for sustaining the work of his brain.

Then the artist is a member of a social body, and if his work is to meet the highest demands of that body and to satisfy its best taste and judgment he must obey the moral laws which require that he place himself in sympathy with that body. And herein enters the subject of compensation. For as a member of a social body the artist will increase in every possible way his own power for usefulness and good—and the power which rests in the wise use of money is one not to be ignored. On the other hand, if his work is to satisfy his own conscience and to secure him the largest degree of self-development, as well as to bestow the greatest benefit upon his client and to accord with the highest public welfare, he will not place pecuniary gain higher in the scale of values than he will excellence in the quality of the work he puts forth.

And now we come to the spiritual laws governing the life of an artist. We readily recognise the operation of physical and moral laws in our work, but we have yet to realise more fully that the artist is also a part of a universal spiritual order from which beauty of the highest kind has always come, and that if he is to produce a new beauty, an inventive beauty, which shall have a real and enduring charm, he must first absorb in other forms that which he creates.

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* A paper by Mr. Elmer Grey, of Milwaukee, Wis., read at the second annual convention of the Architectural League of America at Chicago, Ill.

For beautiful things of lasting quality in architecture and in all the arts are not tricks of clever fancy which some fortunate ones may discover; they are the result of an assimilation of many kinds of order, and of beauty and of truth into the soul of the artist, where they undergo an unconscious process of transmutation into the creations which his imagination brings forth, and which his knowledge, his skill and his character shape into new material form. He may obtain this nourishment from all sources which he finds will enrich him—from nature, from human experience, from religion, from literature, from painting, from the architecture of the past. But whatever sources he selects should be capable of refreshing him continuously. For the artist is constantly spending his vitality in creative work, and so must continually renew it. Both operations are equally important parts of a creative process, and should be equally instinctive habits of the artist's life. They are analogous to the workings of nature in her method of giving birth to all living things, and such instinctive habits have always been those of the man of creative genius, through whom all true art has been evolved.

Now the architectural style of a country is the result of prolonged endeavour on the part of architects to erect buildings which shall accord with the best taste and with the soundest judgment of a people, and though the endeavours of those architects may often be thwarted and the accomplishment of their purpose seem at times a long way off, a higher power than their own will guide the course of events, and a mightier destiny than any private or public ambition will finally determine the quality and the permanence of the country's architectural style.

Important movements in architecture, such as the so-called Romanesque of Richardson, occasioned by the influence of creative men of exceptional individuality, may prevail for awhile. The demands of unhealthful social conditions, such as inordinate accumulation of wealth by classes of people who lack corresponding degrees of culture, may result in the vulgar and ostentatious over-adornment of their buildings. But the architecture of a country which will be truly representative in style, and which will endure with a lasting beauty, will voice the highest ideals of its people, and will spring from the hearts of conscientious men who have accomplished the architectural expression of its noblest national life.

The attainment of such an architecture involves a process of growth which cannot be hastened. It requires a condition of wide and deep culture in the people of a country, and a corresponding degree of culture in its architects; and though we have such culture in this country, either the reconciliation between the people who possess it or the form through which it is trying to find architectural expression is not complete enough to point definitely toward the qualities which distinguish an architectural style, or the intangible nature of style prevents our recognition of as much of one as we may have.

Perhaps, unknown to us, it is taking form in the many noble architectural monuments that have been and are being built by contemporaries. For all architectural beauty which is natural and vital to the best American life will contribute to the growth of an indigenous and inventive American architecture.

To further the growth of such an architecture in every possible manner should be our ambition; our methods should correspond with the noblest methods of men who are working for the benefit of mankind in other walks of life; and our hope of success should lie in a consciousness of our relation to the divine source of all life, of all growth and of all accomplishment.

The following remarks on Mr. Grey's paper were offered by Mr. L. H. Sullivan, of Chicago:—

The historical styles in themselves are absolutely without value as such, and will not bear analysis. They were the expression of certain men who lived at a certain time. If these men who lived at such times were noble-minded and of noble spirit and heart their work is noble. If their minds were degenerated, their work is degenerated. All these qualities you will find depicted in the architecture of the past, running from the highest to the lowest, from the most noble to the most degenerate. The form in which these thoughts or feelings or the lack of thoughts or feelings as they are disclosed have nothing to do with the case when fundamentally considered. As Mr. Grey has truly said, the style is the evolution, if there be nothing other than the expression of its personality. If three men happened to think and feel something alike, the work of those three men will appear something alike. The same can be said of a thousand men acting and feeling the same way. That is practically all that can be said relative to the consideration of the national style as applied to the individual work. What counts, what is final and of consequence, is the individual. This has always been true, is true now, and always remains true. What the individual thinks and feels makes him either a valuable or valueless member of the age in which he lives. If anyone supposes that by study, however reverent or serious it may be, in the spirit in which the past expresses itself, makes himself such valuable member, he is woefully mistaken. It may be true that he regards those expressions with reverence because he regards all expression of the mind with reverence. It has been suggested by Mr. Grey that by virtually relinquishing all the distinct forms of those styles we might finally reach a definite expression of our own. I see no reason why that would not be the result. There can be nothing else. A form which represents one state of feeling may not apply to another state of feeling. As, for instance, take the style of Francis I.; it will not apply to the present age, nor conform to our national feeling. Francis I. and the men of his day are dead, and will stay dead. Let us suppose, if it is possible to suppose, an architect, filled with the same spirit, influenced by want of sympathy, and under certain circumstances should build the same house in New Orleans that he builds in St. Paul, the people of New Orleans occupying such a structure would find it to be exceedingly uncomfortable. The first effort should be to adapt it to the comforts of the people with reference to the place where they live. What has style to do with it? This thought may be carried all through the discussion we have before us. What is the use of talking about books or about the styles we have passed? We have before us a simple plan. Examine any ordinary building with a little care and you will find it has the expression of one idea, solely and organically unfolding itself to the smallest detail. Therefore, if I talk about books or style, what will we gain by ignoring the fundamental law of development? A moment's reflection and serious thought will fill you with the correctness of the idea contended for. I know of no reason why that should not be the true idea: that architecture is the true expression of our lives.

A LIVERPOOL CATHEDRAL SCHEME.

THOUGH the vexed question of a cathedral for Liverpool seems to be as far from settlement as ever, the project has not been abandoned, says the *Liverpool Courier*, but is being tenderly cherished with varying degrees of hopefulness. Some twelve years ago or more various plans for a noble cathedral worthy of the diocese of which Liverpool is the centre were discussed without the contending parties arriving at any definite decision. There were difficulties not only with regard to the design, but to the position which Liverpool's cathedral should occupy. In fact, many persons contend that it was "the battle of the sites" which prevented the city obtaining a cathedral at all. Since the appointment of Dr. Chavasse as second bishop of the diocese of Liverpool, there has been, even at this early stage of his occupancy of the See, a slight revival of interest in a project which is bound sooner or later to occupy the attention of all loyal Churchmen in the diocese. It is understood that the bishop feels that the present time is inopportune for promoting such a grand Church enterprise, war having made extraordinary claims on the means of all classes in the community. Nevertheless, some Church people are anxious that a definite scheme should be before the public, so that when a suitable time came it might be promoted with energy. One fact to realise is that the site which the old cathedral committee adopted (St. John's Churchyard) is now beyond reach, having been acquired by the Corporation, and this circumstance gives special importance to the Church Street site, which many warmly advocated in years gone by.

At the present time there are to be seen on application at the vestry of the cathedral church of St. Peter plans which Mr. T. D. Barry, the well-known Liverpool architect, prepared some years ago for a cathedral on the site now occupied by the church wherein the plans are deposited—a site, by the way, which the Rector of Liverpool considers eminently suited for such a noble pile. The architect still holds the opinion that Church Street is the right place for a Liverpool cathedral, and to all interested in the question an inspection of his plans will be time well spent. The general scheme of architecture suggested by Mr. Barry is plain Gothic, and it is certainly free from any redundancy of ornamentation. The building, as designed, is 209 feet in length and 65 feet in width, and allows about 55 feet of clear light and air space between it and the nearest buildings east and west. The north wall of the transept is set back 50 feet from the present fence in Church Street, while the south wall of the transept stands about 45 feet from School Lane. Setting back the building thus far, it is claimed, minimises the sound of street traffic, which could be further aided by using wood paving instead of granite setts. The cathedral, according to Mr. Barry's scheme, would be built of dressed stone inside and out, with groined stone ceilings, and would cost not more than 120,000*l*.

ARCHÆOLOGISTS IN NORTH WALES.

A NUMEROUS party of archæologists assembled last week in the pretty little Welsh watering-place Pwllheli to carry out an interesting programme of excursions and lectures which it was arranged to continue throughout the week. The gathering owes its origin to the enterprise of the Corporation and other gentlemen by whose energies a new Pwllheli has been brought into existence during the last ten years. The week's proceedings will have the effect of not only disclosing to the archæological eye parts of North Wales which are of no mean historical importance, but less known than other Welsh districts, but also of extending the growing fame of Pwllheli as a health resort. It is a town whose charter dates back to the time of the Black Prince, and though it still remains as in the time of Pennant "a magazine which supplied the whole of the Lleyn peninsula," the country around cannot be described as in a poor, neglected state. The rural parts have made remarkable strides in prosperity as the result of better means of transit, though up to the present not a single mile of the whole of the peninsula is traversed by railway.

The ladies and gentlemen attending the conference were received by the mayor (Dr. Wynne Griffith) and mayoress, and chairman of the Carnarvon County Council (Mr. Jones Morris) in the assembly-room of the West End Hotel. Among the guests was Lord Russell of Killowen, who is enjoying a short respite between the Dolgelly and Carnarvon assizes. His lordship, attended by his marshal and secretary, arrived in the town early in the afternoon, and spent some hours yachting in Cardigan Bay, proceeding as far as the St. Tudwal Islands.

Three large char-à-bancs were requisitioned to convey the party, which numbered about sixty, to Aberdaron. Lord Russell of Killowen preferred to stay behind in the town, and, as on the previous day, spent several hours in yachting in the bay, while Lord Tiverton, who accompanies the Lord Chief Justice, joined the excursionists. The drive, favoured as it was by the finest weather enjoyed this year in Wales, proved an immense success. Taking a somewhat circuitous route on the journey outward the party made a short stoppage six miles from Pwllheli at Castell Marcha, a farmhouse noted in the historical annals of the Lleyn district. It is a building on the Vaynol estate, dating back to 1628. Dr. John Rhys dilated upon the quaint legend attached to the house, which has a striking similarity to legends in Ireland and other countries. At Llanengan, not far from which is situated the birthplace of the Bishop of St. David's, the rector, the Rev. Mr. Williams, conducted the party through the parish church, the foundation of which dates back to the fourth century. Its chief attraction is an oak screen which we are informed was brought over from Bardsey, and at the time of the Civil War was hidden in the sands and afterwards recovered. From this onward the drive lay along an elevated track from which the sweep of sea and the long range of Carnarvonshire and Merionethshire mountains formed a stretch of scenery almost unsurpassed in its magnificence. After a stay of an hour and a half at Aberdaron, not inaptly described as the end of the world, during which an enjoyable luncheon was spread on the grass, the journey back was performed through Morfa, Nevin, and the celebrated Bodvean Woods.

An excursion was also made by sea to Bardsey Island. "The Sacred Isle" and "the burial place of 20,000 saints" was most enjoyable. The party was conveyed on the 40-mile voyage in three yachts towed by the steam tug *Wave of Life*, the transport being provided by the Pwllheli Town Council. In the evening Principal T. F. Roberts, of the Aberystwith College, presided at a lecture delivered by Professor Hugh Williams, of Bala, on "Old British and Mediæval Welsh Monasticism." In his opening remarks the Chairman said that the conference was remarkable for many things, but principally because it was the first ever held in Wales under the patronage of a municipal corporation, a fact honourable to Wales in general, and to the town of Pwllheli in particular. The work of the conference proved the necessity for an education on the broadest possible basis of an army of Welsh students to investigate the unequalled field of archæological subjects which Wales provided. This necessity the Welsh intermediate schools and university would in time satisfy.

The Thursday's excursion comprised a visit to the famous Vorticern's Valley, debouching from the southernmost and wildest end of the Snowdonian range precipitously into the sea, and the tremendous pre-British unmortared stone fortress of Tre'rceiri (the City of Giants), covering an area of some 60 acres on the very crown of the triple-peaked "Yr Eifl" mountain, which forms such a striking feature of the southern end of the Snowdon range. The greatest interest was evinced in this colossal relic of by-gone warriors by the party, who subsequently walked on to the village of Llanaelhaiarn, visiting the famous well en route, and afterwards inspecting the old church. In the evening the Rev. S. Baring-Gould delivered a lecture on "Stone Encampments in Wales and Elsewhere," which was followed by an interesting discussion, and on Friday a journey was made to Carnarvon, the ancient church of Clynnog being taken en route. At Carnarvon Mr. George Farren, one of the vice-presidents of the Liverpool Engineering Society, entertained the archæologists and another large party to luncheon at the Royal Hotel. Mr. Farren, who presided, was supported by Lord Russell of Killowen, Sir Horatio Lloyd, Sir Llewellyn Turner, the High Sheriff (Mr. T. Lewis), &c. The Lord Chief Justice, in proposing "Success to the Archæological Conference," said that those assembled at Pwllheli that week were engaged in an agreeable and useful work—they were making places of historic interest in Wales more widely known, and thereby adding to the attractions which nature had already lavishly bestowed upon that favoured country. Principal Roberts, of the University College of Wales, responded to the toast, and remarked that there was no county in the United Kingdom which could have shown so much of interest as had been presented to them as a party of archæologists in Carnarvonshire that week. During the afternoon the party was conducted through the castle by Sir Llewellyn Turner, deputy constable of the famous building, which under his supervision is being still renovated and placed in a splendid state of preservation. In the evening there was a lecture delivered at Pwllheli by Professor J. E. Lloyd, of the North Wales University College.

ARCHITECTURAL AND ARCHÆOLOGICAL SOCIETY OF DURHAM.

THE members of this Society visited Holy Island on the 6th inst., and discovered much to interest them. The ruins of the Priory afforded a special attraction, and Dr. Greenwell's (the president) observations regarding them were listened to with great interest.

This visit, Dr. Greenwell said, was the third so far as his Society was concerned. From Holy Island, he explained, the whole of the northern part of England was Christianised. King Oswald brought from Iona, where he himself had obtained Christianity, the great man, Aidan, who established a bishopric at Lindisfarne. It formed a branch of the Celtic Church, and differed from the Christianity which came from Rome. The island seemed a very unlikely spot upon which to settle missionaries who were going to Christianise a very large district round about. But there were more reasons than one why that was done. The defensive position of the place was one reason. It was practically an island. A still greater reason was its close proximity to Bamburgh, the royal residence, and perhaps a yet greater reason than all was its resemblance to Iona. Colman was the last Celtic bishop, and he occupied the position from 661 to 664. In the latter year a synod took place at Whitby under Osway, king of Northumbria, and some very important matters were determined. The two principal things were the time of keeping Easter or the Paschal cycle and the position of the tonsure. The Celtic practice was to shave the front of the head, whilst the Roman practice was to shave the top. But there was no doubt whatever that what was really at the bottom of all the dispute was a desire to bring the Celtic Church into complete obedience and union with the great patriarchal Church of the west, namely, Rome. Wilfrid, the advocate of the Romanish cause, carried his points, and the Celtic observances were done away with. Colman returned to Iona and nearly the whole of the monks withdrew with him. Passing on to speak of Cuthbert, Dr. Greenwell said his own opinion was that that great man was not of Irish birth, but that he belonged to a Teutonic people settled in this part of the country—that he was born in the lowlands of Scotland, or, at all events, lived there in early life. He went to Lindisfarne from Melrose. Ultimately he lived as a hermit on one of the Farne islands, where he died at the comparatively small age of fifty years. In spite of the good work St. Cuthbert did, Dr. Greenwell believed that it would have been much better for him had he continued his missionary work and had not withdrawn himself from among his people for the very long period of eight years. After describing the manner in which the body of St. Cuthbert was removed to Durham, where it still lay, Dr. Greenwell made a very interesting statement respecting the remains of the coffin now in the Library at Durham. He had endeavoured, he said, to put the coffin together. After several failures, owing to the tenderness of the wood, he had at length got it into such a condition that any person could see what the coffin had been. He was waiting for warm weather to enable him to work in the apartment where it lay, and to fix it in a case prepared for it. It was covered with sculpture. Upon the lid was a figure of our Lord, surrounded by four evangelistic symbols, some in runic characters. On one side were figures of the archangels and on the other side were fourteen figures, including the twelve Apostles. On one end there were two archangels, and upon the other was a Virgin, with Jesus upon her knees.

Dr. Greenwell's remarks were brought to a rather abrupt termination by the announcement that luncheon—kindly provided by Sir William Crossman—was ready. The excellent fare having been partaken of, a hearty vote of thanks was accorded to Sir William and Lady Crossman for their hospitality, Dr. Greenwell proposing and Colonel Milne-Holme seconding the proposition.

Sir Wm. Crossman suitably responded.

The party then assembled within the Priory ruins to listen to a description of the place by Mr. C. C. Hodges, a gentleman thoroughly conversant with his subject. He traced the history of the Priory from the beginning. A wooden thatched church, he said, first occupied the site. He had a great deal to say respecting the edifice of which the ruins remain, and also respecting the domestic buildings attached thereto at one time for the use of the monks. There was no trace of a chapter-house. After the dissolution of the monasteries the private buildings were turned over to the Wardens of the Eastern Marches, and were used as a Government storehouse for a considerable time. At length they fell into ruin. The main reason why they were not completely destroyed at the time alluded to was this, that there were no important buildings on the island, and these were, therefore, of great use to the authorities. From the ruins a move was made to the church, where Sir William Crossman read an exhaustive and able paper on "The Bishops of Lindisfarne," and was thanked for the same on the motion of Mr. R. O. Heslop.

The vicar of the parish, the Rev. D. Bryson, pointed out several items of much archæological note within the walls of the Early English church. Altogether the day's proceedings proved enjoyable and instructive. The general arrangements were excellent, and neither hitch nor accident of any kind occurred. With the exception of a slight shower no rain fell during the stay on the island. A cold wind, however, prevailed.

CONGRESS OF ARCHÆOLOGICAL SOCIETIES.

At the congress of the thirty-nine archæological societies in union with the Society of Antiquaries, held under the presidency of Sir John Evans, K.C.B., on July 12, the following resolutions were adopted:—

1. "That, in view of the discussion on the British Museum Bill lately before the House of Commons, this congress desires to press on the Government the immediate necessity of adding to the buildings at the British Museum."

Delegates well qualified to speak, says Mr. Ralph Nevill, pointed out that county councils would certainly not accept the custody of the newspapers, &c., that it was proposed to thrust upon them, and the congress was strongly of opinion that such an important national object as the extension of the British Museum should not be made dependent on arrangements as to which there is no prospect of present agreement.

2. "That this congress protests against the Bill now before Parliament to amend the Union of Benefices Act of 1860 by extending to the country at large the statutory powers now existing in the City of London by which the City churches are gradually being destroyed as a necessary consequence of the union of benefices."

The congress has no wish to obstruct needful legislation and is heartily in sympathy with the movement to supplement poor livings, but thinks that care should be taken to guard against the wholesale destruction of old churches that all delegates agreed would be sure to ensue as a consequence of the proposed Act.

3. On the proposal of Mr. Stanley Leighton, M.P., seconded by Mr. Willis-Bund, it was resolved:—

"That in the opinion of this congress any attempt strictly to enforce the law of treasure trove would have an injurious effect not only on archæological science but on all collections of antiquities, both public and private."

It was pointed out that it has been clearly laid down by legal authority that the right to treasure trove applies only to precious metals that have been hidden, and not to such as have been lost or deliberately abandoned, as in the case of treasure accompanying burials. The recent action of Mr. Balfour in claiming for the Crown the Irish-found treasure, the acquisition of which by the British Museum he had, as First Lord of the Treasury, sanctioned four years previously, unsettles the proprietorship of the whole of the collections in Great Britain, both public and private, and must have the most mischievous effect on the study of archæology by causing the circumstances and locality of finds to be concealed, by rendering impossible in this country the acquisition of costly objects by private collectors, and by forcing the export of such objects abroad, where fair prices can be obtained. The action of the Treasury in claiming objects found in graves is not only illegal and vexatious, but is causing the destruction of countless objects of great value.

4. "While gladly hailing the proposal properly to house Diocesan records, this congress is of opinion that it would be advantageous to defer the passing of Lord Belper's Bill until after the departmental committee on the custody of local records has made its report."

5. On the proposal of Mr. J. Horace Round it was resolved to take steps to promote the systematic study of place-names on the lines so successfully adopted in France.

A committee with power to add to their number was appointed to promote this object.

BIRMINGHAM ARCHÆOLOGICAL SOCIETY.

The third excursion of the Society for the present season was held on the 14th inst., and was well attended. The weather favoured the experiment of making this a walking excursion, and although the 7 miles promised may possibly have grown in length under the fostering uncertainties of field paths in a most lonely district, yet the result was eminently satisfactory. The two churches of Arley and Astley formed the archæological basis of the journey. Of Arley it can only be said that the exterior is more attractive than the interior. The latter has undergone restoration with the usual results. Almost every semblance of antiquity has been obliterated, and the manner in which the principal remaining monument and the piscina have been framed in oak is, and it is to be hoped will remain, unique. The exterior, on the other hand, has been reverently treated, and the massive battlemented tower is fine and stately. The church of Astley has many points of great interest, and although it has suffered egregiously from the neglect and rapacity of former lords of the manor, yet the injuries are of so long standing as to have been partially condoned and covered by time. What exists now is but a fragment of the noble edifice once known far and wide as the chief landmark—"The Lantern"—of the Forest of Arden. The beautiful tracery of the windows, the finely-finished buttresses and corbel table all testify to the departed grandeur of the original church. The interior is singular from being really only a portion of the architect's design, the height being out of all proportion to the present extent of the building. The stalls are decorated with very curious paintings of saints, and the walls retain the quaint Jacobean scriptural quotations which do not now appear so much out of harmony with the architectural style of the building as they must once have seemed. The traces of a demolished side-chapel are still very evident, and in digging a grave recently a very interesting discovery of a tiled pavement belonging thereto has been made. The visitors were indebted to the Rev. Mr. De Castro, at Arley, and to the Rev. J. Arthur Dibbin, at Astley, for every courtesy and assistance in their inspection of the churches seen.

GENERAL.

Mr. Thomas L. Lockwood, who was well known in the Chester district for his architectural work, died on Sunday last in his seventy-first year.

We have been informed that the Masonic Temple at the Holborn Restaurant, of which a view has lately appeared, was not designed by Mr. T. E. Collcutt, to whom it was accidentally ascribed.

Meetings will be held on July 26 at Liverpool and on July 27 at Manchester to consider the Bill for the Registration of Architects. Mr. Walter Emden will preside and a paper will be read by Mr. Ellis Marsland.

The Memorial of the late Duke of Westminster is to take the form of filling the rose window in the south transept of Westminster Abbey and the twelve lights below it with stained glass, which will be carried out at the cost of about 3,000*l.* under the direction of Mr. G. F. Bodley, A.R A.

M. Ferdinand Humbert has been elected professor of painting and MM. Mercié and Marquiste professors of sculpture at the Ecole des Beaux-Arts.

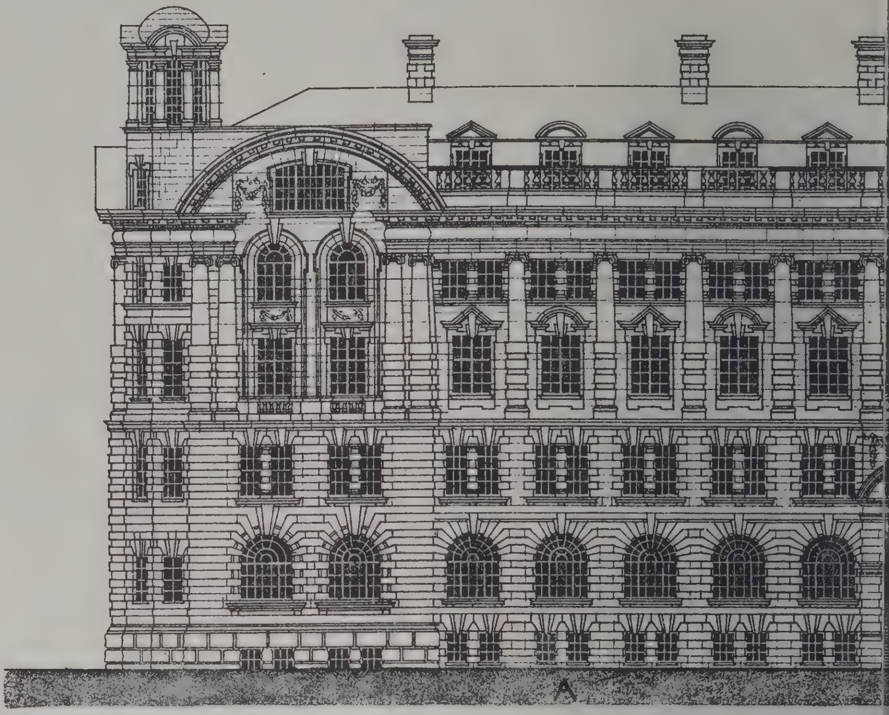
Lord Alverstone has been appointed chairman of the Royal Commission on Historical Manuscripts in the place of Lord Lindley, resigned, and Lord Lindley becomes a member of the Commission.

M. Deglane, the architect of the Grand Palais of the International Exhibition, attended a dinner given in his honour by his pupils on the occasion of his promotion to the rank of officer of the Legion d'Honneur. He was presented with a fine piece of pottery, the work of M. Lachenal.

Permission has been granted to Sir John Charles Robinson, Her Majesty's surveyor of pictures; Mr. Lionel Henry Cust, director and keeper of the National Portrait Gallery; and Mr. Claude Phillips, keeper of the "Richard Wallace" Museum, that they may accept and wear the Cross of Chevalier of the Order of Leopold conferred upon them by the King of the Belgians in recognition of their respective services in connection with the exhibition of the works of Vandyke at Antwerp.

The Institution of Junior Engineers will visit on Friday next, July 27, at 6.30 P.M., the generating station and depôt of the Central London Railway, Shepherd's Bush.

UNIVERSITY of ILLINOIS



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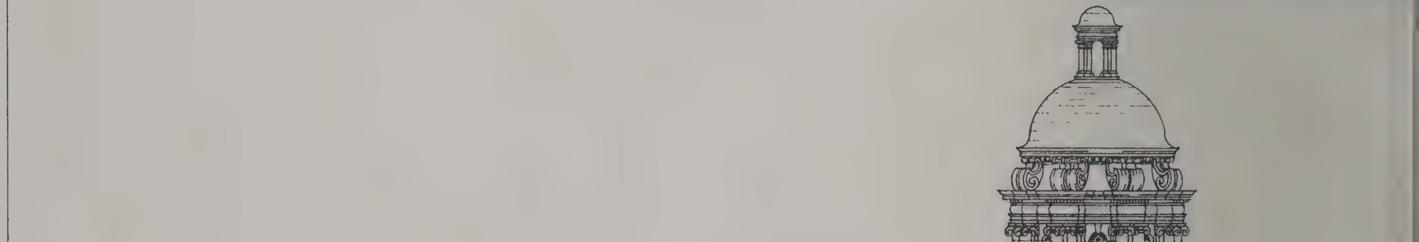

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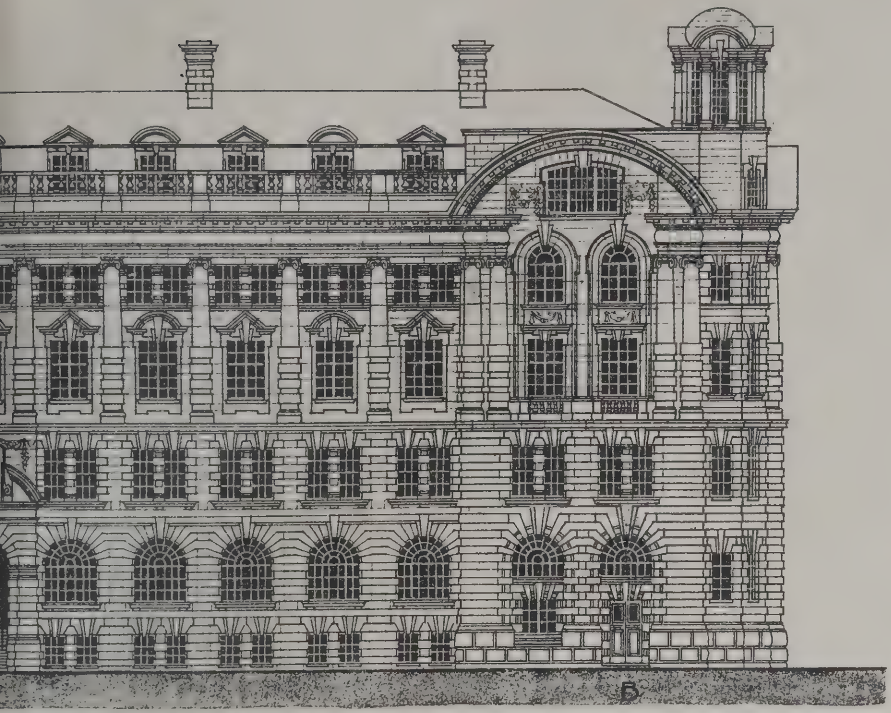

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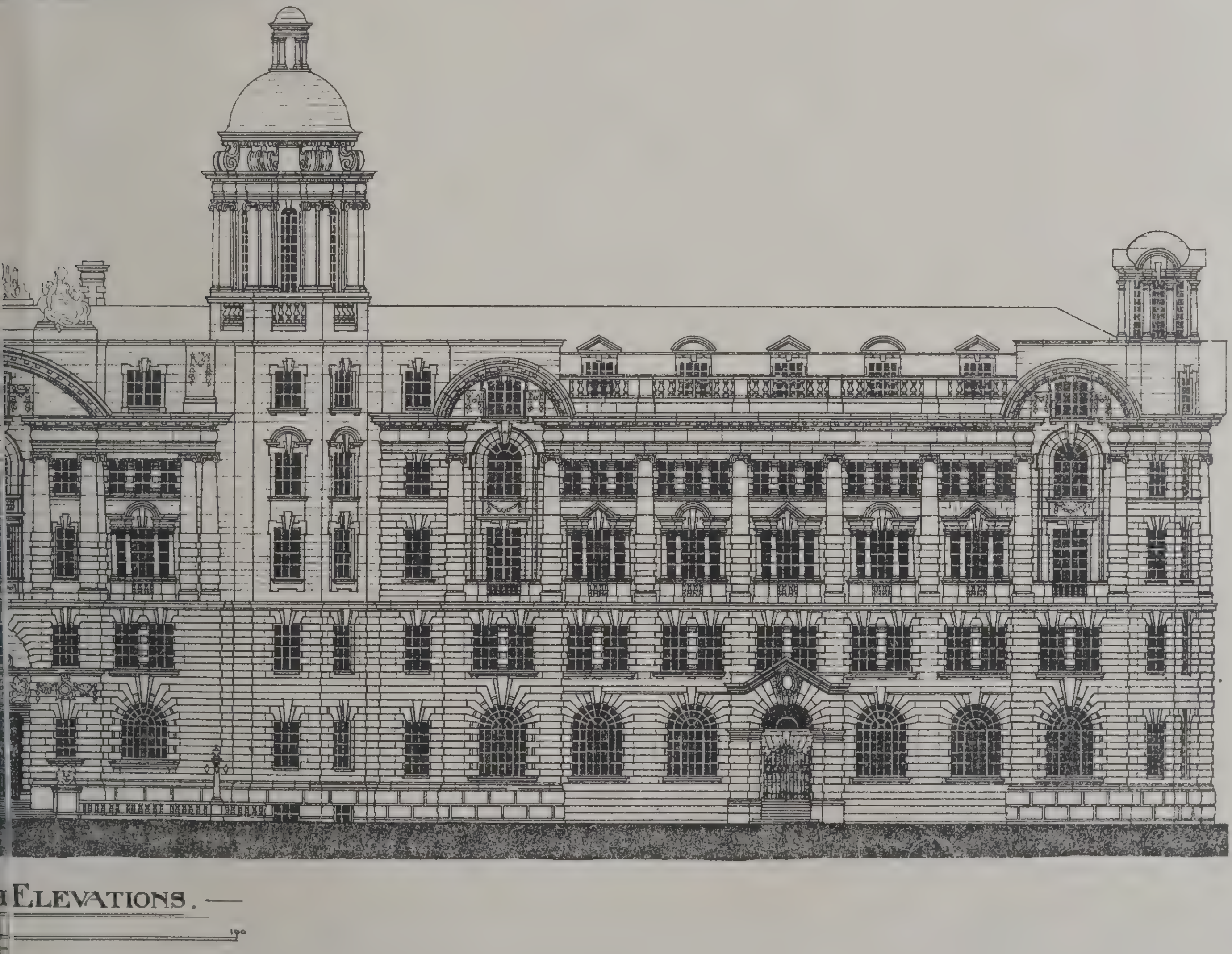

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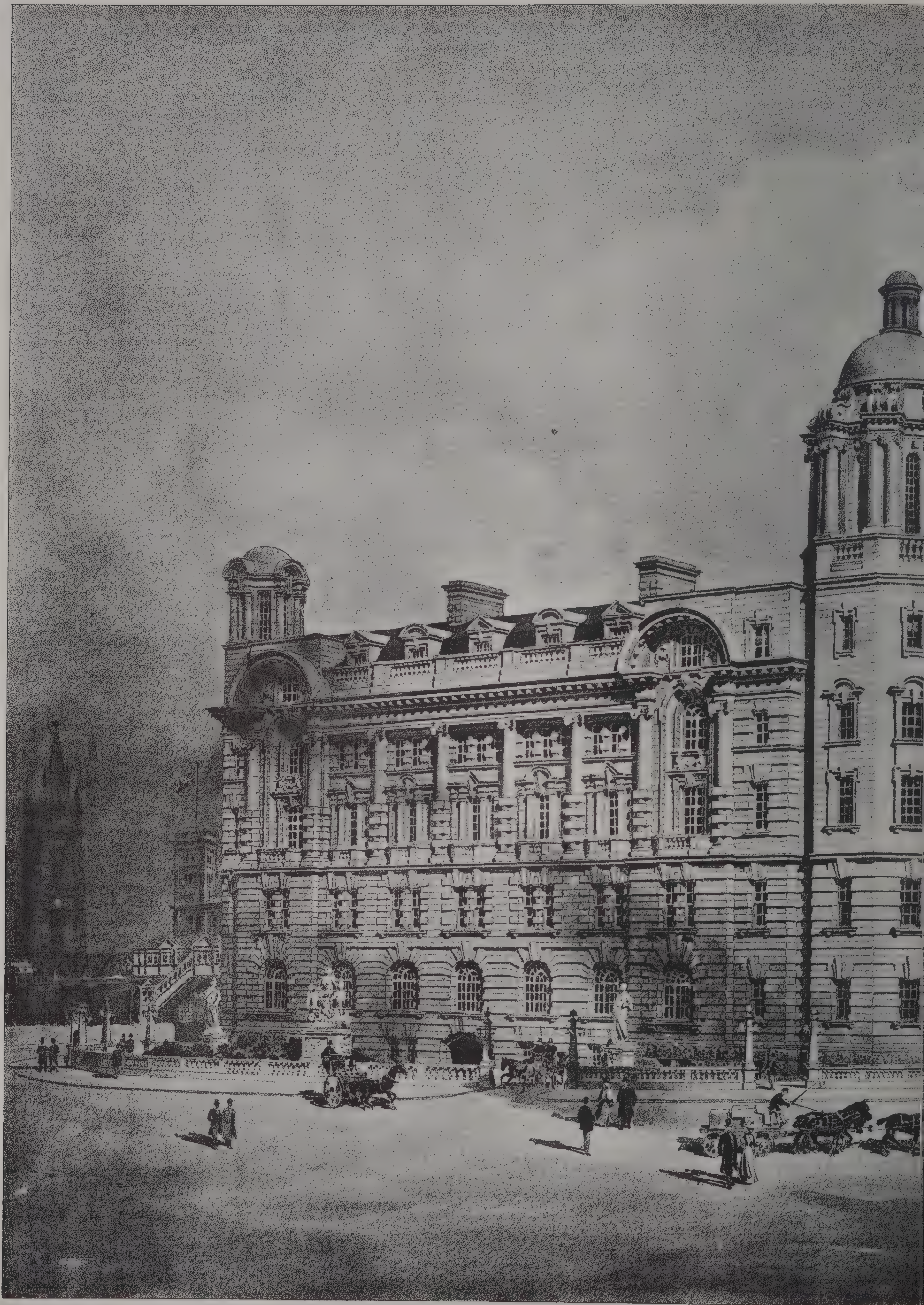

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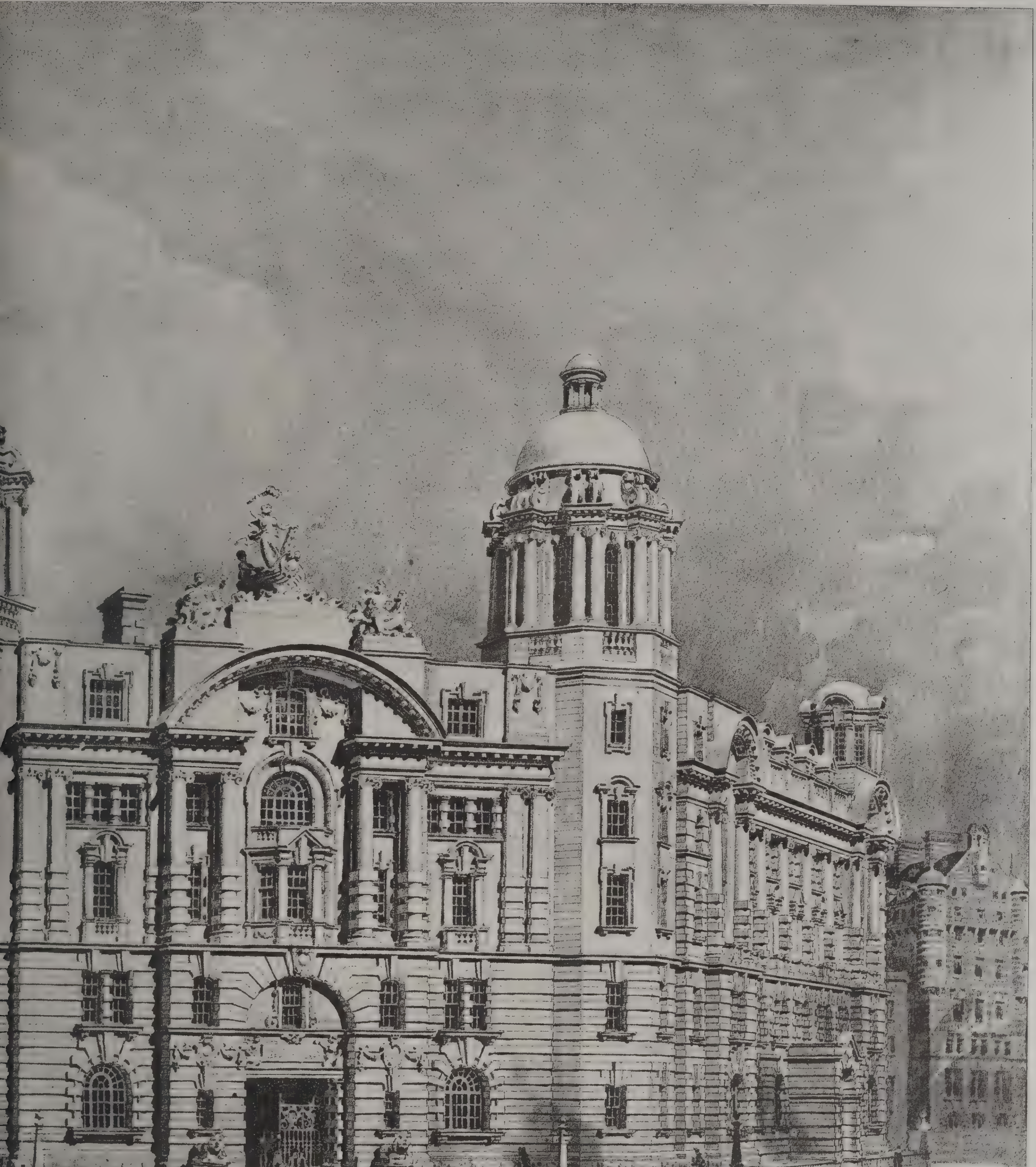

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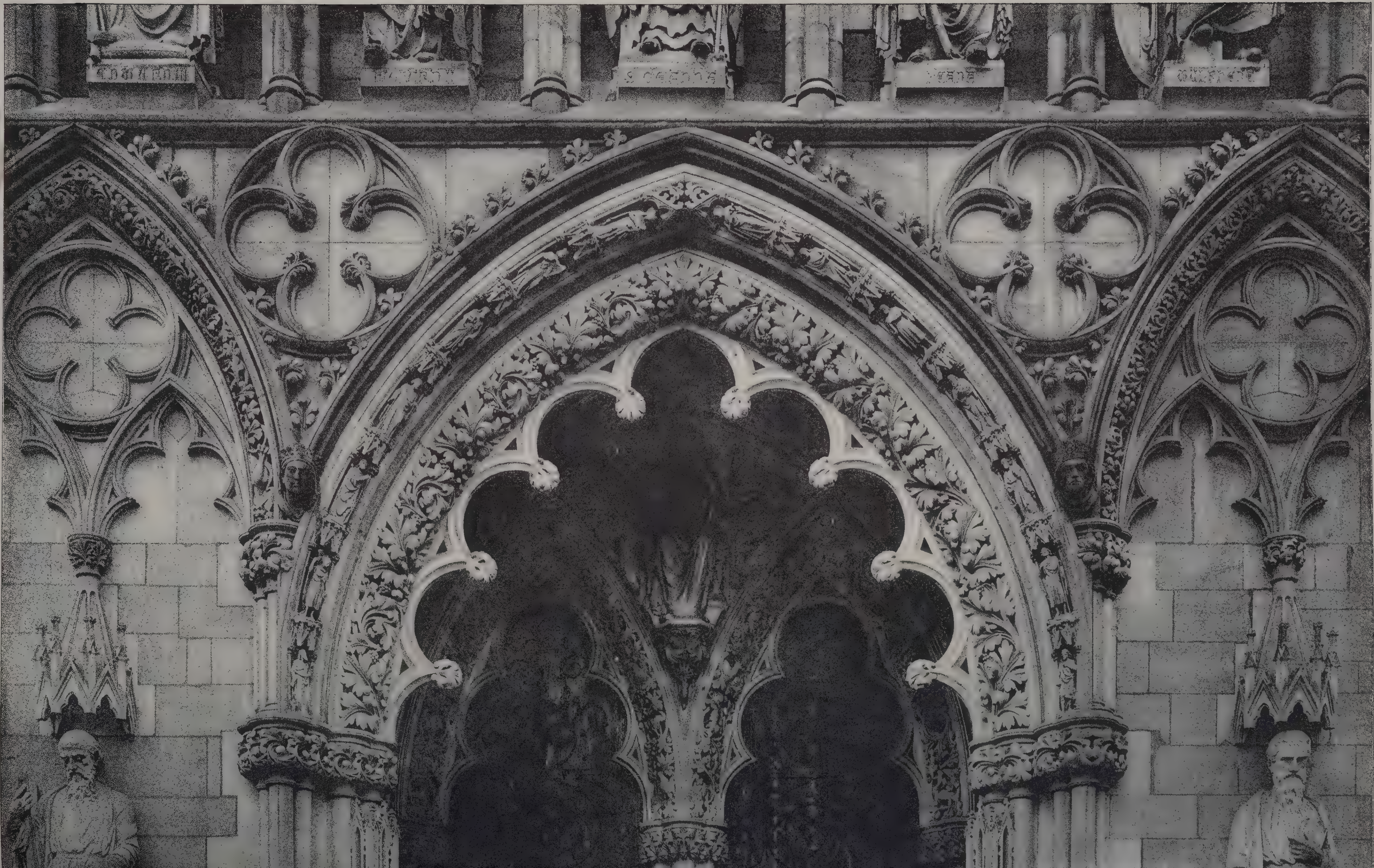
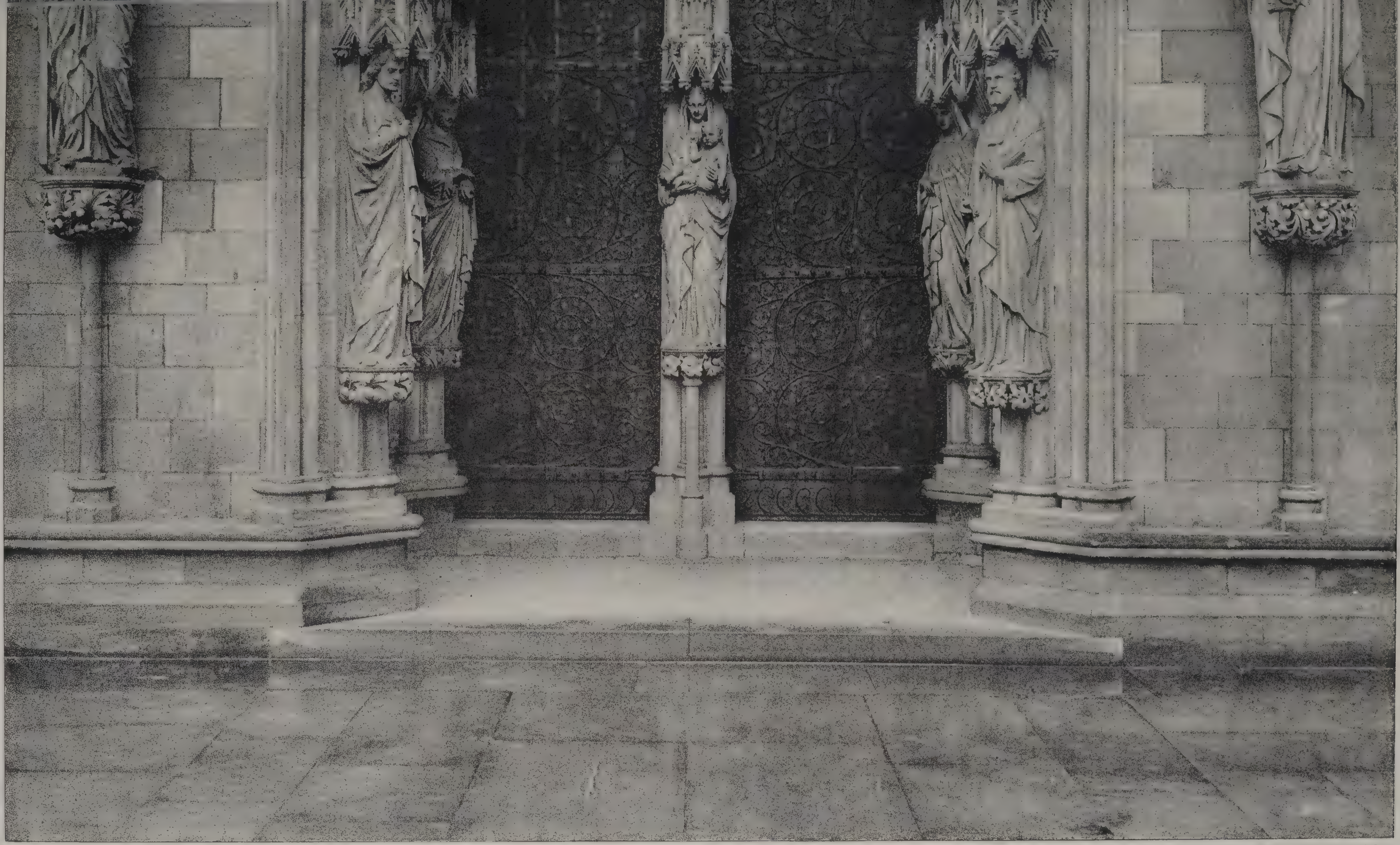
OL DOCK OFFICES. PERSPECTIVE VIEW.

R.I.B.A., and ARNOLD THORNELY, A.R.I.B.A., Architects.

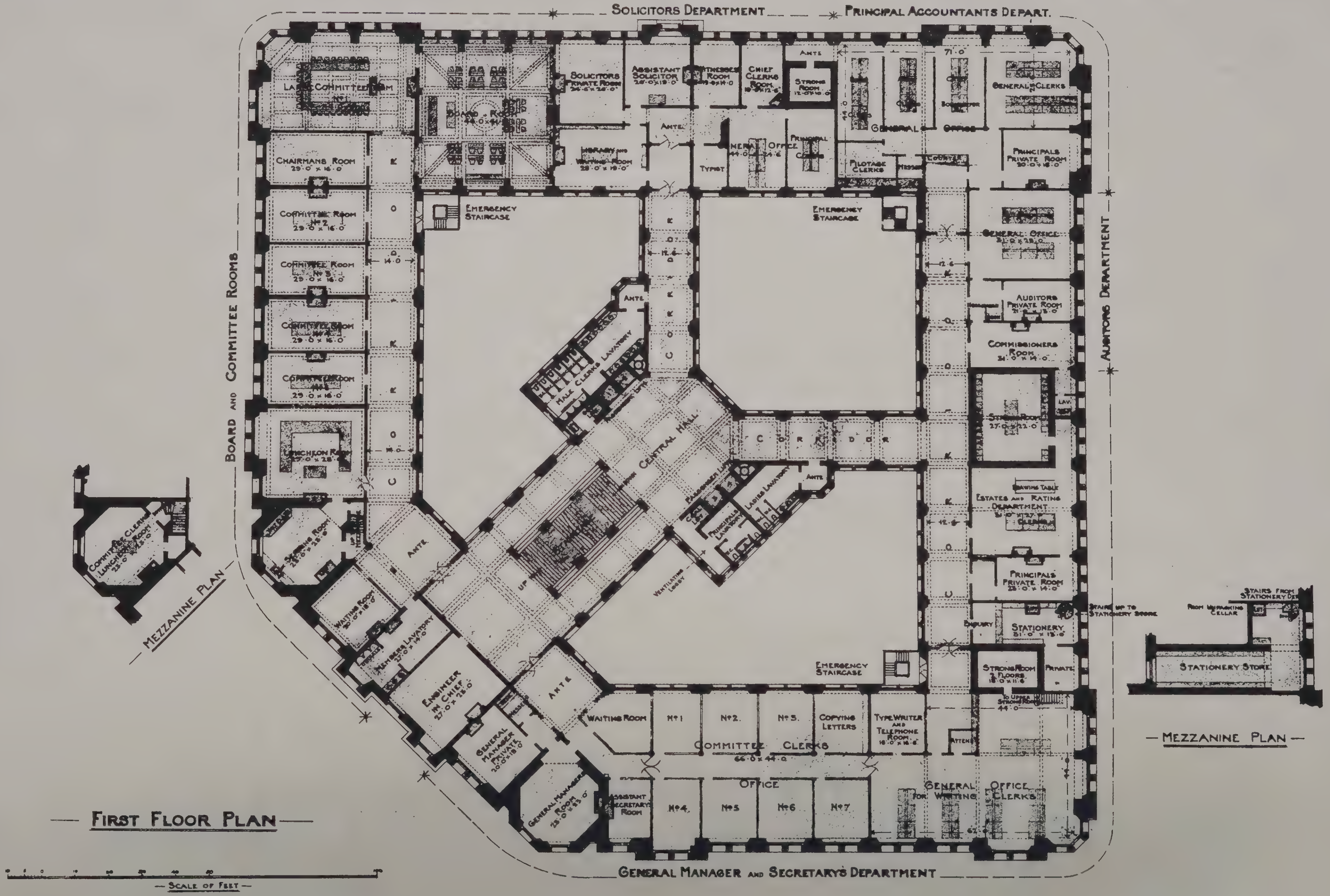




INK-PHOTO SPRAGUE & C° L^D 4 & 5 EAST HARDING STREET FETTER LANE E.C

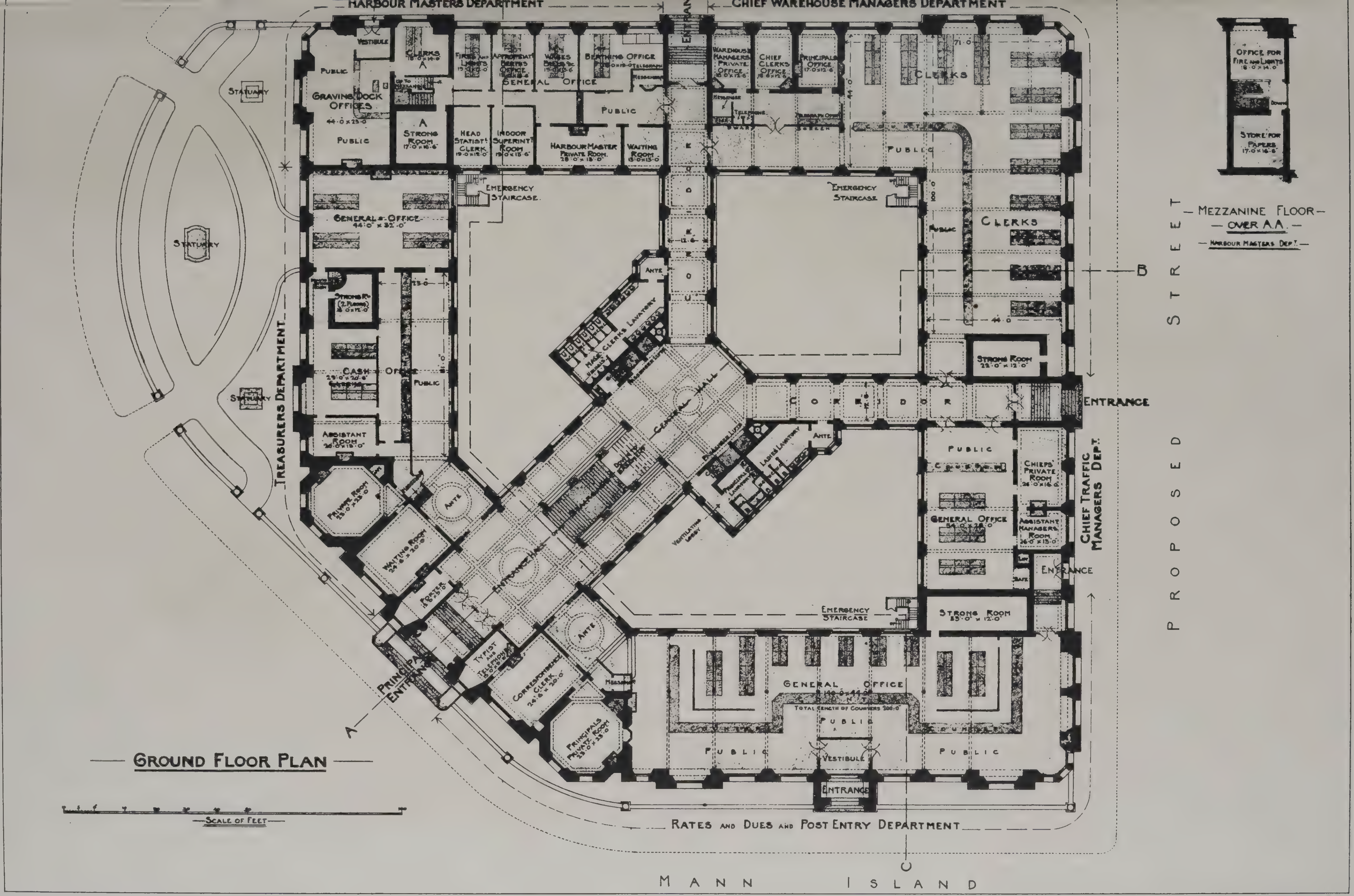
CATHEDRAL SERIES, NO. 289.—LICHFIELD: WEST DOORWAY, MODERN RESTORATION.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS



— FIRST FLOOR PLAN —

SOLICITORS DEPARTMENT
PRINCIPAL ACCOUNTANTS DEPART.
AUDITORS DEPARTMENT
GENERAL MANAGER AND SECRETARY'S DEPARTMENT
BOARD AND COMMITTEE ROOMS
LARGE COMMITTEE ROOM No 1
BOARD ROOM 24·0 x 41·0
SOLICITORS PRIVATE ROOM 24·6 x 24·0
ASSISTANT SOLICITOR 26·0 x 19·0
WITNESSES ROOM 19·0 x 14·0
CHIEF CLERKS ROOM 19·0 x 12·6
ANTE
STRONG ROOM 12·0 x 10·0
GENERAL OFFICE
CLERKS
BOOKKEEPER
GENERAL CLERKS
71·0
44·0
ANTE
LIBRARY AND WAITING ROOM 29·0 x 19·0
TYPIST
GENERAL OFFICE 44·0 x 24·6
PRINCIPAL CLERKS
PILOTAGE CLERKS
MESSR
COUNTER
PRINCIPALS PRIVATE ROOM 20·0 x 16·0
GENERAL OFFICE 31·0 x 28·0
AUDITORS PRIVATE ROOM 21·0 x 13·0
COMMISSIONERS ROOM 31·0 x 14·0
STRONG ROOM 27·0 x 22·0
LAV.
DRAWING TABLE
ESTATES AND RATING DEPARTMENT 31·0 x 27·0
CLERKS
PRINCIPALS PRIVATE ROOM 23·0 x 14·0
STAIRS UP TO STATIONERY STORE
ENQUIRY
STATIONERY 31·0 x 13·0
STRONG ROOM 2 FLOORS 13·0 x 11·6
PRIVATE
TO UPPER STRONG ROOM
44·0
ATTEND
TYPE WRITER AND TELEPHONE ROOM 16·0 x 16·6
COPYING LETTERS
No 1
No 2.
No 3.
COMMITTEE CLERKS OFFICE 66·0 x 44·0
No 4.
No 5
No 6
No 7
GENERAL OFFICE FOR WRITING CLERKS
67·6
WAITING ROOM
ASSISTANT SECRETARY'S ROOM
GENERAL MANAGERS ROOM 23·0 x 23·0
GENERAL MANAGER PRIVATE 20·0 x 19·0
ANTE
ENGINEER IN CHIEF 27·0 x 23·0
MEMBERS LAVATORY 27·0 x 14·0
WAITING ROOM 20·0 x 19·0
MESSR
SHORTHAND ROOM 23·0 x 23·0
UP
ANTE
LUNCHEON ROOM 27·0 x 28·0
COMMITTEE ROOM No 5 29·0 x 16·0
COMMITTEE ROOM No 4 29·0 x 16·0
COMMITTEE ROOM No 3 29·0 x 16·0
COMMITTEE ROOM No 2 29·0 x 16·0
CHAIRMANS ROOM 29·0 x 16·0
EMERGENCY STAIRCASE
EMERGENCY STAIRCASE
EMERGENCY STAIRCASE
C O R R I D O R
C O R R I D O R
C O R R I D O R
C O R R I D O R
14·0
12·6
ANTE
MALE CLERKS LAVATORY
CENTRAL HALL
UP
PASSENGER LIFT
CASH LIFT
PRINCIPALS LAVATORY
LADIES LAVATORY
ANTE
VENTILATING LOBBY
COMMITTEE CLERKS LUNCHEON ROOM 23·0 x 23·0
MEZZANINE PLAN
STAIRS FROM STATIONERY DEPT
FROM UNPACKING CELLAR
STATIONERY STORE
MEZZANINE PLAN
0 10 20 30 40 50
SCALE OF FEET



INK-PHOTO SPRAGUE & Co. L.D. 4 & 5 EAST HARDING STREET FETTER LANE E.C.

First Premiated Design for the Liverpool Dock Offices. Plans.

Messrs. BRIGGS & WOLSTENHOLME, F.F.R.I.B.A., F. B. HOBBS, A.R.I.B.A., and ARNOLD THORNELY, A.R.I.B.A., Architects.

The Architect.

THE WEEK.

A Congress of Architects will be held in Paris during the coming week. On Monday the proceedings will begin at 9.30 a.m. with a meeting in the hall containing Delaroche's *Hémicycle* at the Ecole des Beaux-Arts, when the President will deliver an address. In the course of the day an exhibition of designs by architects will be opened in one of the halls of the school. In the afternoon a meeting will be held at which the subject of copyright in architectural works will be considered. On Tuesday there will be an excursion to Chantilly to view the treasures bequeathed to the French. In the evening any foreign architects attending the congress will be received in the Hôtel de Ville. On Wednesday there will be two meetings, when the familiar subjects of instruction in architecture and the position of architects in various countries will be discussed. The subjects to be treated on Thursday will be cheap dwellings in all countries, foundations and metallic skeleton construction. At Friday's meeting in the forenoon papers will be read on the conservation of monuments and the influence of administrative regulations on contemporary architecture. In the afternoon the medals and awards of the Société Centrale des Architects will be distributed. On Saturday the annual dinner will take place at the Hôtel Continental.

Surplus property often presents a difficulty to local authorities. Law has still an affection for abstractions, and the Courts would make no scruple of deciding that houses and lands can be purchased in the exact quantities required, as if they were pieces of cheese. To anyone who has had to wade through ancient decisions, the Trial Scene in the "Merchant of Venice" will not appear imaginative, for a jurist would say that in theory it was practicable to take a pound of flesh, neither more nor less, from a man's body, and if there was the weight of a hair more the operator could be justly put to death and his property confiscated. The Brighton Corporation have been in difficulty about some property which they have acquired for street improvements. Accordingly they applied to the Local Government Board for permission to let for fifty years premises in London Road. A letter was received in reply stating that, having further considered the proposal in the light of the decision in the recent case of the Attorney-General *v.* Hanwell (19 L.J. Ch. 39 (1900), 81 L.T. 504, 48 W.R. 69, 63 J.P. 824), it appeared to the Board that a lease for a term of fifty years was practically an application of the surplus premises in a manner which, according to that decision, was held not to be within the powers of the Board to authorise. In view of this difficulty, the Board had decided to limit their action in the matter to giving a direction, under section 175 of the Public Health Act, 1875, that the surplus premises in question should not be sold. The Board, however, left it to the Town Council to consider whether they were in a position to regard the premises as corporate land, so as to enable them to exercise their power of leasing without the consent of the Board under section 108 (2) (a) or (b) of the Municipal Corporations Act, 1882. The plain meaning of this epistle is that the Local Government Board will not assume responsibility for the letting of the premises. The Brighton Council have, however, taken the risk, and have granted a fifty years' lease of the premises in question.

During the last year or two the belief prevailed in Paris that the project for erecting a memorial of the late Jules Simon had collapsed, and that conclusion was taken to be in keeping with the political career of the statesman. From the time he gave up teaching philosophy as an official professor, and tried to apply its principles to practical politics, Jules Simon occupied an unique position. He was incorruptible, and he could not believe that any party, even when it possessed the benefit of his services, was to be taken as infallible. He tried to make the best of things, and accepted sacrifices voluntarily. Whether in power or in opposition, he depended on his pen for subsistence, and was content to live at the top of a house over a cheap restaurant opposite the Madeleine. There is still a chance that his statue will be erected very near his modest abode. The President of the Senate a few days ago submitted to Madame Simon a small model of the statue, for which a commission has been given to M. Denys Puech. The site which has been granted for it will be on the Boulevard de la Madeleine and opposite the Rue Royale. The statesman will consequently appear to be looking towards the Chambre of which he was one of the true ornaments. He will be represented standing near a tribune with folded arms, and in that way his good-humoured stoicism and adherence to his principles will be expressed.

One of the most difficult tasks for a sculptor is to represent a building on a plane surface. The bronze plaque by M. Roty, which has been presented to M. Alfred Picard, the chief commissioner of the Paris Exhibition of 1900, is therefore a work of unusual interest and most appropriate for the purpose it serves. On it are represented the two palaces of the Fine Arts, which are the most attractive features of the Exhibition, with the avenue in which they are placed and which is extended across the Seine to the Invalides. Probably no relief in existence presented so many difficulties, and that M. Roty has been able to introduce such a stretch of perspective is a triumph for him. The plaque, which is in gilded bronze, stands on a pedestal which has been cut out of beautiful green marble. Above is the inscription "Le Conseil d'Etat au Président Picard," and below is a branch of laurel with date April 14, 1900.

It is sufficiently hard upon employers to meet the numerous cases under the Workmen's Compensation Act which are supposed or imagined to be due to some neglect on the part of the representative of a contractor. But it is evident from Timmins *v.* The Leeds Forge Company that henceforth, for accidents which formerly were considered to be beyond human foresight, and were shortly described as "the act of God," employers will have to bear the responsibility. The workman in the case in question was employed in shifting timber. One night in January, 1899, there was a severe frost, and on the next day the man found the planks were frozen together. He appeared to have had no difficulty in moving them, and he gave no notification to a foreman or to anybody in authority that he was carrying out his work under conditions which imposed any strain on him. But on coming to one layer which appeared to have been more firmly frozen he ruptured himself, but not for the first time. The county court judge held that the man was entitled to compensation and awarded it. The employers brought the case before the Lords Justices of the Court of Appeal. They decided that there was evidence which warranted the county court judge in coming to his decision. The conclusion must therefore be drawn that natural phenomena do not any longer count as contingencies which cannot always be provided against. If materials cannot be thawed, it is really more economical to suspend operations.

The late Mr. Joseph M. Meade could in many ways be taken as an exemplar by many of his fellow citizens in Dublin and his countrymen throughout Ireland. He was the son of a builder, and received an university education, by which he was qualified to join any of the so-called learned professions. But he preferred to be a builder like his father and other members of his family. His occupation, however, did not disqualify him to be a doctor of laws and a privy councillor, as well as lord mayor and alderman in his native city. The esteem in which he was held by the younger generation of architects may be judged by the following resolution:—"That the Architectural Association of Ireland, having heard with the deepest regret of the sudden death of Alderman Meade, desires to place on record the great respect and esteem in which the deceased gentleman has always been held by the members of this Association; it deplores the great loss which both the architectural and building professions have sustained, and ventures to express its sincere sympathy and condolence with his widow and family in their sad bereavement." Similar resolutions were adopted by several other societies in Dublin.

ARCHITECTURAL PARTNERSHIPS.

ANYONE who knew WILLIAM MARTIN of Birmingham, whose death we mentioned last week, could have no doubt about the advantages of partnership when they heard that the firm of MARTIN & CHAMBERLAIN was established. Mr. MARTIN had gained a reputation for shrewdness and for knowing how to turn events to his own profit, and the fact of resolving to have another architect to co-operate with him was sufficient to assure all in Birmingham that the conditions of practice had altered, and that one head and a pair of hands however able were no longer enough to cope with them. It was plain that the new arrangement must lead to an increase of profit for Mr. MARTIN, otherwise there would have been no change. He had established a business which was successful, and a man who continued to be so hale and energetic could have carried it on as formerly. But his keen eyes recognised that Birmingham, which had so often changed its character and its spirit, was about to be transformed, and he realised that he was hardly sufficiently pliable to meet the new tests with success. Accordingly he adopted the late JOHN HENRY CHAMBERLAIN as his associate and as the representative of the new era.

As was said last week, "it would be difficult to find two men who appeared to have so little in common." In physique, as in intellect, they were unlike. One had the stout frame we associate with the pioneer, and appeared to be able to force his way by mere energy and resolve through a host of obstacles. The other seemed to have much of the languor which was taken to be a characteristic of the modern æsthete. When JOHN HENRY CHAMBERLAIN introduced an immense lily in mosaic as an ornament on the walls of the offices of the School Board there were critics, including admirers, who used to say it was a symbol of himself. He assumed the character of the artist who sought after the perpetuation of beauty, and who was indifferent to such sublunary considerations as those arising from the payment of fees. Sometimes he posed as if he were a martyr to art and that the burthen of an excess of commissions was, as WOLSEY said, "too heavy for a man that hopes for heaven." But what was he to do? If he did not undertake the designing of buildings how could Birmingham escape from its past lowliness and prepare for its future greatness? If in these rather childish displays of a man who was supposed to be trying to cope with Destiny, WILLIAM MARTIN seemed of little account, the senior partner was quite content. There were times when he might be taken by a stranger for one of the casual utilities who drop into offices in the hope of a small job in measuring, quantity-taking or serving notices. No man could be more disposed when occasion demanded it to change the foremost for the second place. When anybody who resolved to take one of the vacant plots made available by the clearances came to arrange with Mr. MARTIN he was sure to be told with what pleasure a sketch would be prepared by Mr. CHAMBERLAIN, suggesting the kind of building which it would be the owner's interest to erect, and who could be surprised if after an explanation of the drawing the commission was given to the firm? WILLIAM MARTIN on those occasions was happy to become the interpreter of the genius of his partner. He spoke the language which men of business understood, and he could divine their desires to the letter. The two partners in that way followed the courses which were most conducive to prosperity, and it was no wonder that the individual practitioners of Birmingham were unable to withstand them.

The two were admirably matched in another way. In Birmingham it was almost impossible a quarter of a century ago for a man in any profession to gain success unless he showed competence to take part in public, or rather in political, affairs. As a wire-puller in the wards we imagine WILLIAM MARTIN was infinitely more potent than his partner. But he was a silent force. JOHN HENRY CHAMBERLAIN could deliver a discourse from a platform in admirable style, and his æsthetic studies enabled him to enhance a commonplace subject and to give it a piquancy which was not attainable by ordinary political orators. Birmingham with all its practicality has a love of ideas, and the people were proud when they found that the London lecturers on art, although they had gained reputation in the Metropolis and elsewhere, could not speak so well and so easily about painting, sculpture, architecture in past and present times, or become more prophetic about their developments in the future, as their tall and smiling townsman who was so willing to be useful and to help others in an emergency.

It is often difficult to decide whether great men make the circumstances which carry them onward to success or whether they are the creatures of circumstances, but in Birmingham MARTIN and CHAMBERLAIN appeared to fit in so well with what was around, they might be taken as appearing in a world which they had arranged for their own convenience. They represented theory and practice, design and construction, Ruskinism and worldly wisdom. Birmingham was proud and believed it had initiated a new art, which was to be more universally adopted than PUGIN'S Gothic. More or less disappointment followed when death dissolved the partnership, and that perhaps was the reason which prevented the recognition of any of the contemporary architects as the successor of JOHN HENRY CHAMBERLAIN.

It is difficult to discover two architects who can be equally loyal to a common interest, and hence partnerships are more rare in architecture than in most other businesses. The division of labour is not so easily arranged as it was with Messrs. MARTIN & CHAMBERLAIN. An artist desires to claim a work as his own production, and if painters and sculptors do not form firms of practitioners, why should architects? Precedents are against the arrangement. The Brothers ADAM were the Adelphi in more than one sense, and they gained by the peculiarity. Although the INWOOD family worked together, we doubt if there was a regular firm of WILLIAM INWOOD & SONS. JOHN NASH did not take PUGIN into partnership. WYATVILLE preferred to draw in his post-chaise rather than share fees with a partner. TITE united with COCKERELL only on special occasions. The firm of SCOTT & MOFFAT was not more enduring than that of GODWIN & CRISP. Other cases will recur to the reader in which the architects seemed to be well adapted to work as partners and yet failed in their endeavours.

The question will arise, however, whether the need for co-operation of another kind besides that of architect and assistant would not often be more convenient at the present time than it appears to have been in the past. Old-fashioned architectural practice corresponded with Classic design—it was made up of a few parts. The styles which are now employed consist of a surprising number of details, and the architect's work in connection with them has become no less varied. The knowledge which a modern architect is expected to possess would amaze VITRUVIUS himself. Whether it is always possible for a man's mind to retain so much and to be able to act upon his knowledge instantly is a problem which would puzzle psychologists. For the majority of men designing will not allow of any rivalry. It seems irrational to expect that an architect can fly in a hurry from his drawing-board to inspect drains and return without some loss of his power of design, owing to the disturbance of equilibrium which arises from the mind having to accommodate itself to varying conditions. In busy solicitors' offices the practice is becoming common of having partners for the different classes of business, or it may be for different law courts. There is not, perhaps, so much unity in legal work as there is in architectural practice, but the diversity of procedure is almost as great in one case as in the other. Two divisions can, however, be easily marked out. Many architects have most predilection for office work. They find enjoyment in planning and designing. Although quantity-taking can be easily supposed as being related to that class of work, it is well known that in the provinces there are architects who are greatly put out if they have to consider measurements and calculations which elsewhere are relegated to surveyors. Whenever an architect has a gift for designing it is wise to allow it to have power over him, or he can vary his devotion to it by occasional visits to works in order to realise how far his intentions have been made to assume material form. It may happen that such visits should only be made occasionally, when the mind is in a calm state. Both the second and the third PUGIN, for example, lost a good deal of money by the destruction of work which they believed did not correspond with their drawings, and since their time other architects have caused inconvenience to themselves and others by the passion which exhibited their disappointment at contractors' operations. If the extent of the business would allow, it certainly seems preferable that the dealings with a contractor and his employés should be left to a partner who need not fear that his invention is to be troubled by occasional rows with foremen and threats of legal proceedings for breaches of contract. Painters and sculptors have no such agitations to interfere with the progress of their creations, and it seems hard that an architect whose operations require still more concentration cannot live in an atmosphere that is at least equally serene.

HISTORICAL CROSS SECTIONS.

When a railway has to be made everybody knows it is necessary to obtain Parliamentary sanction for the project. The Bill which is to be turned into an Act has to be accompanied by a plan and section. The section is supposed to represent the ups and downs along a centre line. All sensible men are aware how impossible it is to lay out a centre line that will be the most economical when the work has to be done by scampering over the ground in the murky days of November. Accordingly Parliament in its wisdom, as representing a common-sense nation, has wisely allowed of deviation to some extent. Should the Bill become law it is therefore permitted to change the direction of the line anywhere within the limits. A straight line may be made a curve, or *vice versa*, so long as there is no encroachment on the land outside the dotted lines which usually mark the limits on plans. When financial arrangements are concluded it is possible to begin preparations for constructing the railway: a plan and longitudinal section having a more exact character than was possible with Parliamentary plans must be prepared. When the section is completed, what has to be done appears straightforward and easy. The cuttings are coloured red and the embankments green, and their depths or heights are shown in feet and decimals of two places. Railway construction seems to be so systematised, anybody might assume to be competent to undertake the work. The experienced contractor, however, spends but a comparatively short time in the examination of a longitudinal section. He looks out for the biggest cuttings and embankments, the tunnels and the bridges which are to be of an exceptional character. He makes inquiries about the places which are to be assigned to him for "spoil." But what he is particularly anxious to discover is the number and character of the cross sections. He knows very well that what may appear very easy work on a longitudinal section assumes a different character when on one side of his centre line he has a hill and on the other side a hollow.

There is not much exaggeration in supposing that all histories may be compared with the two classes of section. The stereotyped official history is like the longitudinal section. It starts at a definite point and continues the even tenor of its way until it comes to the conclusion of the period which is to be treated. There is usually a beginning at the Court, and the line followed goes on through intrigues, marriages, burials, alliances, campaigns, until a period is reached when it is necessary for the same sort of treatment to be recommenced. It is needless to say that history or the historical longitudinal section generally becomes a bore through its monotony. There is only a narrow strip to be dealt with, for the limits of deviation are rigorously fixed. Shakespeare makes Henry V. inquire what is it that kings have and that common folk have not also, except ceremony; and when he asks himself what ceremony is he finds it difficult to arrive at an answer. When the muse of history therefore tries to make out something which has little relation with common life she generally fails. But the cross sections of history are a very different sort of revelation. We do not see people marshalled by a master of ceremonies or a chamberlain. The characters may be humble, but we know they are real and their actions are not always dictated by rules of etiquette. We therefore propose to offer a few irregular glances at the eighteenth century, which are of a kind from which the professional historian would turn away his eyes, but which nevertheless may be found not wanting in interest to our readers. Let us begin with Birmingham.

That city, which now possesses a great variety of churches, at the beginning of the eighteenth century possessed only one, St. Martin's, for St. Philip's was not erected till about 1719. One of the acts of Queen Anne was to arrange that facilities should be given for the erection of the second church, but the inhabitants were too poor to continue the work unaided. The following petition was sent to Her Majesty about 1711:—

> The town of Birmingham being a market town of great trade and commerce, is becoming very populous, and having but one church in it, which is not sufficient to contain the greater part of the inhabitants thereof, whereby they are deprived of the benefit of Divine service performed there, and the cemetery or churchyard being not large enough for the deceased persons to have decent burial, your Majesty, at the humble suit of the said inhabitants, was graciously pleased to pass an Act of Parliament for building another parish church and parsonage house, and making another churchyard in Birmingham aforesaid. That the said inhabitants at their great expense, besides what has been contributed by some charitable and well-disposed persons, have erected a church on a piece of ground that was generously given to them, but not being able to finish the same so that Divine service may be performed therein, they do most humbly beseech your Majesty that you would be pleased to grant to them some of the windfalls or dotard trees in your forest of Whittlewood, or Needwood, or in any other your Majesty's forests or chaces, to be disposed of to raise money for finishing the said church, or that your Majesty would in any other manner enable them to do it.

At the present time not one of the numerous congregations in Birmingham would appeal to the Crown for aid to build a church, and consequently the document serves as a standard by which progress in one direction may be tested. Nor is it now necessary to obtain an Act before building a church, for in that case the payment of the Parliamentary fees would leave little to be expended by builders. There was in the latter years of Queen Anne and in the early years of George I. a general desire to erect churches. Their absence in London was to Sir Roger de Coverley "a heathenish sight." But the new Act for building fifty churches was expected to produce a reformation. The work, however, as the knight said, was slow. The history of the transaction has yet to be fully investigated. A writer in 1718, when referring to Parliamentary proceedings, says:—"You will see by the votes that the first design of building the fifty new churches is knocked in the head by their rebuilding old ones, and it is said we shall be thirty thousand pounds in debt for them." But the desire for new churches did not increase the reverence for Mediæval remains. About the same time a diarist writes:—

> To Wells, fifteen miles from the Bath, in the afternoon to see Glastonbury, the ruins of a noble structure; the kitchen still remains, built of stone and no timber used, the form of it is octangular. The walls that remain of the monastery are every day lessened; there is a house built out of the stone by a Quaker, who has taken the ornaments which he could find and adorned his own house. The estate belongs to the Duke of Devonshire.

In a political sense a more important demolition than was possible in an English abbey occupied men's minds about 1713. If an order were given to dismantle the fortifications of Gibraltar in our time it would not excite more indignation than arose over the destruction of the fortifications of Dunkirk. England had been fighting for the possession from the fourteenth century, and alternately held it or surrendered it. Charles II. sold it to Louis XIV. at a high price, and the French king employed 30,000 men in strengthening the works. The English army failed to capture it in 1695. By the treaty of Utrecht, the Dunkirk fortresses were to be taken down and the port filled up. One news-writer said:—

> From Dunkirk we have an account that the razing of the fortifications continues and that the sluices are entirely ruined, the basin laid open and the wharf of it thrown down; that the famous piers that run out into the sea a prodigious length, and which form the haven, are now being pulled down, and the whole work it is supposed will be finished in about six weeks' time, after which we have no more to do about it but to repent of the weakest step that ever this nation took.

It was said by some that after the demolition Dunkirk was more dangerous to English trade than before, and parties were divided over the policy of the treaty. But fifty years afterwards we find an unexpected result to the levelling.

A correspondent of a Richard Phelps, writing on December 9, 1763, informs him how "the English Jesuits, drove from St. Omer and received by this Government at Bruges, have purchased the large stones of the works of Dunkirk for to erect their seminary at Bruges, and vast quantities are arrived there on the way." The arrangement was a characteristic example of the indomitable courage of the members amidst difficulties, for at the time the fall of the Jesuits was decreed by the majority of statesmen throughout Europe. Bruges was to be no more than a temporary refuge.

There was one man then in England who would have willingly demonstrated the possibility of destroying or rebuilding the works of Dunkirk or those in any other harbour if his diving machines were employed, viz. Robert Davis, the brother-in-law of the author of "Robinson Crusoe," and like him a wonderful projector. The machine he said cost him hundreds of pounds, but as his "very tender, loving wife," who was also a gentlewoman and "a very deserving person," would not allow him to seek after wreckage of India ships, although there were chests of silver and gold to be picked up, he was willing to sell the invention for the insignificant sum of 50*l.* As proof of its utility, he furnished the following certificate from people of the Lizard:—

> We, whose names are hereunto set, inhabitants of the Lizard parish, in the county of Cornwall, do certify that Mr. Robert Davis did, in his diving engine, go down in the sea several fathoms deep under water, at a place called Purpeare Cove, and did sing the Hundredth Psalm under water, and afterwards go several times under water in his said engine at Bumble Rocks, where were taken up several bars or pigs of silver, some years ago. We do further declare that there have been several persons with divers sorts of diving engines in order to go under water at the silver wreck aforesaid; but none of them could ever go down that depth the said Davis did; nor were their engines so completely contrived for going under water as the said Mr. Davis's engine is.

If the chests of gold and silver had been more often recovered in the eighteenth century, it is questionable whether England would now be in a more satisfactory state. But the country is still indebted to those who collected works of art in those days, partly with a view to profit, for their property has often become the nation's. The following statement of the advantages which were likely to accrue from gathering manuscripts is characteristic of a time when financial speculation was in its infancy:—

> Old manuscripts do not fall, but rise in their price, so much as to save the interest of the money laid out upon them. For, first, the trade of the bookwriters and illuminators is at an end, few copies of old books being transcribed, since printing is more cheap and more commonly used. Then fires, or other calamity of war, or robbery, still diminish the number of old books, even those which are secured in public libraries, and much more those which lie in private families; so that they still grow more and more scarce. Manuscripts also in tract of time grow yet more ancient. Thus we know of books which have been used by learned men one hundred or two hundred years ago, that have now gained so much additional age since their time, and are consequently so much more valuable than they were one or two hundred years since, especially considering how many ancient books have perished in the meantime. These considerations induce many of the nobility and gentry to secure old manuscripts at any rates when they appear, whose example being imitated by others of the commonalty, a greater demand is made for these things that can be supplied; so that old manuscripts are not only rendered very dear thereby, but are likely to be always dearer and dearer, as long as they can last.

It is not certain with all the consideration for antiquity whether living artists were always liberally treated in Queen Anne's time. Sir Godfrey Kneller could boast that ten Sovereigns sat to him, and after enjoying Court favour during his life a monument was erected to him in Westminster Abbey with an epitaph adapted from Raphael's. But in those days it is evident an artist was expected to utilise royal portraits as advertisements, and in consequence to produce them on more economical terms than were in use when inferior people were represented. A letter from Kneller, dated March 15, 1713-14, casts a side light on the patronage of those days, and will be a revelation to many:—

> I hope your lordship will be pleased to favour me with having my salary inserted in the new establishment, that I may have the honour of being Her Majesty's servant regarded, although it was omitted by the instigation of a stingy, penurious, griping Duchess. And I humbly beg leave to observe to your lordship that having for every of the Queen's pictures and the royal family's pictures before—by agreement—and have had less fifteen pounds than any other subject pays—these two hundred pounds per annum are in consideration paid. And I have had nothing for my attendance when the Queen is from town, all Her Majesty's reign, nor any travelling wages, all which has been omitted to my great loss and detriment.

Kneller's prices to ordinary sitters were not excessive; for a head he charged 15 guineas, 30 for a half-length, and 60 for a full-length.

The versatile William Kent attempted portraiture, although his eulogist, Horace Walpole, has to admit that "his portraits bore little resemblance to the persons that sat for them; and the colouring was worse, more raw and undetermined than that of the most errant journeyman to the profession." Such was the state of art, however, Kent was appointed the king's painter, and the following epigram by Lord Chesterfield was not too severe for the occasion:—

As, to Apelles, Ammon's son
  Would only deign to sit;
So, to thy pencil, Kent! alone
  Will Brunswick's form submit:

Equal your envied wonders! save
  This difference we see,
One would no other painter have—
  No other would have thee.

It would be a suitable subject for discussion whether Kent's raw colouring, although it had its vogue, did not cause a reaction, of which one of the results was a preference for grey bricks. Red brick was in fashion at the beginning of the eighteenth century, but before it closed grey brick came into favour. The following passage will suggest the reasons which were ostensibly given as dictating the change:—

> We see many very beautiful pieces of workmanship in red brick, and to name one, the front of the green house in Kensington Gardens will be sure to attract every eye that has the least curiosity; but this should not tempt the judicious architect to admit them into the front walls of the buildings. In the first place, the colour itself is fiery and disagreeable to the eye, it is troublesome to look upon, and in summer it has the appearance of heat which is very disagreeable; for this reason it is most improper in the country, though the oftenest used there from the difficulty of getting grey. But a further consideration is, that in the fronts of most buildings of any expense there is more or less stone-work. Now it were to be wished that there should be as much conformity as could be had between the general nakedness of the wall and those several ornaments which project from it; the nearer they are of a colour the better they always range together; and if we cast our eyes upon two houses, the one red and the other grey brick, where there is a little stone-work, we shall not be a moment in doubt which to prefer. There is something harsh in the transition from the red brick to stone, and it seems altogether unnatural; in the other, the grey stocks come so near the colour of stone that the change is less violent, and they sort better together. For this reason also the grey stocks are to be judged best coloured when they have least of the yellow cast; for the nearer they come to the colour of stone, when they are to be used together with it, it is certainly the better. Where there is no stone-work there generally is wood, and this being painted white, as is commonly the practice, has yet a greater effect with red brick than the stone-work; the transition is more sudden in this than the other; but, on the other hand, in the mixture of grey bricks and white paint, the colour of the brick being soft, there is no violent change. The grey stocks are made at this time to a great excellence about London, as many new pieces of brickwork show to the credit of the undertakers. The Duke of Norfolk was so nice in this respect that he had the bricks brought from his estate in that county for the building the front of his house in St. James's Square; but the event shows that His Grace might have been better supplied near at hand as to colour, with equal hardness.

One of the architects who gave preference to grey brick was Sir William Chambers. He employed it largely in the Dublin University. It is remarkable, however, that he was very nearly abandoning that commission. In a letter from him to the Provost, dated July 9, 1778, he actually declines to undertake the work, as the incorrect and insufficient measurements sent him from time to time made it impossible for him, he said, to work with any precision, and the delays in sending even these prevented him from employing the few hours of leisure he had upon the business, and the works of the Crown left him not a moment, so that he could not possibly find time to do the designs required. Explanations followed, and CHAMBERS was persuaded to revoke his decision. But we may have already taxed the reader's attention with sufficient cross sections of the eighteenth century.

PRINCIPLES OF CONSTRUCTION FOR ARCHITECTURAL STUDENTS.

By E. WYNDHAM TARN, M.A.

(*Continued from last week.*)

IV. *Domes and Spires.*

A DOME or cupola consists of a series of horizontal courses built in circles, whose diameters decrease from the springing upwards. When any one of these courses is completed the structure is in a condition of stability, although any number of the upper courses may be omitted. In fact, the domical covering of a building is often left open at the top so as to form what is called an eye in the centre, as can be seen in the inner dome of St. Paul's Cathedral in London and in that of the Pantheon at Rome.

In order, however, to enable us to calculate the thrust and stability of a dome we have to suppose it to be completed up to the crown, and that a number of small slices or lunes can be cut out of it by vertical planes making a small angle with each other, say 2 degs. These thin lunes are treated by the same method as is used for investigating the stability and thrust of arches. As, however, the lunes diminish in width from the springing to the crown we find that the joint of rupture is lower down than in the ordinary arch of uniform width; and in the hemispherical dome it is at the joint which makes an angle of 20 degs. with the horizontal instead of 30 degs., as in the semicircular arch of uniform width.

In a dome of 20 feet span having voussoirs 1 foot thick the horizontal thrust at the joint of rupture amounts to 88 lbs. for every 180th part of its circumference; and in similar domes of different diameters the thrust is proportional to the cube of the diameter and not to the square as in the arch. Thus, in a dome of 40 feet span the thrust will be eight times as great as in one 20 feet span, or 704 lbs. for every 180th part of its circumference.

If a dome of 40 feet span and 1 foot thick stands on a circular wall or "drum" 50 feet high, the thickness of the wall should not be less than 2⅔ feet in order that it may not be pushed out by the thrust of the dome. This thrust may, however, be counteracted by means of an iron belt 2 inches wide and one-eighth of an inch thick placed round the dome at the joint of rupture, or four belts of stout "vat-hooping" placed round it above and below that joint would be equally efficient. In this case the thickness of the wall of the "drum" need not be more than is just necessary to carry the weight of the dome safely. If the above dome is only 4 inches in thickness its thrust will be one-third of the dome 1 foot thick.

Since the dome is supposed not to carry a "lantern" or any other load except its own weight, the pressure on the joint of rupture will be one-twentieth of the safe-load for Bath stone and one-sixth of the safe-load for brick. The thickness of a dome may in fact be reduced almost indefinitely when it has only its own weight to carry, and where it is only required to serve the purpose of a ceiling.

In the case of a dome 60 feet in diameter, built with a thickness of 1½ foot, the horizontal thrust of 180th part of its circumference will be 11 cwts., and if the "drum" is 60 feet high, its thickness must be 6 feet for stability, unless the dome has a belt of iron 14 inches wide and ¼ inch thick at the joint of rupture, or four belts, 3½ inches wide by ¼ inch thick, placed above and below the joint, will be more effective in preventing any thrust on the "drum," the walls of which may be considerably reduced in thickness.

If in the last case the thickness of the dome is 6 inches instead of 18 inches, the thrust is reduced to 4 cwts, and the thickness of the wall should be 3¾ feet, if there is no belt round the dome. Where a belt is used it will require to be 5 inches wide by ¼ inch thick, or four belts 2½ inches wide and ⅛ inch in thickness, placed above and below the joint of rupture.

If a dome is made half as thick at the crown as it is at the springing we can reduce its thrust by one-half, and the thickness of wall supporting it may be reduced by one-third where there is no surrounding belt. If an iron belt is used the sectional area of the belt may be reduced by one-half, as compared with that for the dome of uniform thickness.

In a Gothic dome, such as that of the cathedral at Florence the joint of rupture is lower than in the hemispherical dome, and makes an angle of 13½ degs. with the horizontal, or its position can be found very nearly by drawing a line from the centre of the springing line, making an angle of 20 degs. with that line. In a dome of this kind, 20 feet span and 1 foot thick, the thrust is seven-eighths of what it is in the hemisphere of same span, and a belt of iron 1 inch wide by ½ inch in thickness will suffice to counteract its thrust, if placed round the joint of rupture. Where there is no belt, and the "drum" is 50 feet high above the ground, its thickness should be 2½ feet for stability.

In the great dome at Florence, where the span is 130 feet, we find the thrust of one hundred and eightieth part of the circumference to be 163 cwts., which would require an iron belt 50 inches of sectional area, or five belts 10 inches wide by 1 inch thick, or ten belts 10 inches wide and ½ inch thick. Without a belt, the supporting wall, 175 feet high and solid throughout, should be 12 feet thick, to insure stability.

Where the dome has to support the weight of a "lantern," there will be an increase in the thrust. Supposing the lantern of the Florentine dome to weigh 100 tons, then the increase of thrust produced will be only one-twentieth, the thickness of the dome being taken at 6 feet. But if the dome is thinner, the increased thrust produced by the weight of a "lantern" will bear a greater proportion to the thrust of the unloaded dome.

The Italian domes are generally built in two thicknesses, so as to form an inner and an outer dome. The inner dome is often of lower pitch than the outer one, and is intended merely to serve the purpose of a ceiling and for decoration. The outer dome carries the weight of the "lantern," and also of the outside covering.

In St. Paul's Cathedral, London, the inner dome is spherical and has a circular "eye" in the centre, and serves only as a ceiling, while the weight of the "lantern" is carried by a brick cone, on which rests a mass of timber framework to carry the outer covering. The conical dome is the strongest of all forms of domical structure, and the joint where the thrust is greatest is at the springing. In the St. Paul's dome, which is 18 inches thick, this thrust is 24 cwts. for every one hundred and eightieth part of the circumference, and the thickness of the supporting wall, 200 feet high, should be 7 feet, if there is no counteracting belt. It would require an iron belt of 7 square inches sectional area to counteract the thrust, or two belts 7 inches wide by ½ inch thick.

Spires may be considered as conical domes whose greatest outward thrust is at their base, and may be either circular or polygonal on plan. Taking the case of a circular spire, 20 feet span and 1 foot thick throughout, the angle at the vertex being 10 degs. and the length on the slant 120 feet, we find the horizontal thrust of 180th part to be ¾ cwt. acting at the base; and if it is carried on a circular wall 100 feet high its thickness must be not less than 2½ feet if solid throughout.

Spires are generally built octagonal on plan and stand upon square towers, corbels being built out at the inner angles of the tower to support the alternate sides of the spire. Take, for example, an octagonal spire and tower of the same dimensions as given above; then we find the thrust of one side upon the top of the wall to be 18 cwts., acting horizontally at the base of the spire and tending to overturn the wall of the tower about its base, so that the thickness of the wall should be at least 2½ feet for stability. The thrust of each side will be the same, but that of the alternate or "canted" sides has less effect on the wall owing to its being square on plan.

It is usual to diminish the thickness of a spire from the base upwards until within a few feet of the top, where it is necessarily built solid. In the above example, the thickness at base being 1 foot, it might be diminished to 6 inches at a distance of 10 feet from the top and the rest built solid. The thrust will thereby be reduced by about one-fourth.

(*To be continued.*)

THE IONIDES BEQUEST.

THE public will learn with pleasure, writes a correspondent of the *Times*, that another great art collection has been bequeathed to them—that of Mr. Constantine Ionides, of Brighton, whose death was announced in these columns a few days ago. Two important conditions are attached to the bequest—the first, that the collection shall be kept together in the Victoria and Albert Museum, and exhibited in a room or rooms and be termed "The Constantine Ionides Collection;" the second, that every object is to be exhibited and nothing hidden. This seems to involve not only the display in cases of the magnificent collection of engraved gems and similar objects which the late owner always kept in cases, but the framing and hanging of a vast number of fine prints which have hitherto been religiously retained in portfolios. It will be interesting to learn how far the South Kensington authorities will be able, on practical grounds, to accept the stipulations of the will.

There have been few collectors of taste so catholic as the late Mr. Ionides. An ancient amphora, a Rossetti, a Crivelli, an early ivory, an Ingres, a Degas, a Renaissance jewel, a Rembrandt proof, a statuette of Dalou—everything, in fact, that was fine found in him an appreciative admirer; books, prints, gems, pictures, carvings, carpets, objects of every sort and of every age. Yet the collection does not strike the spectator as in any sense an *olla podrida* like the Soane Museum. It is just such a collection as a man of taste would wish to live with. These things were arranged about the rooms of Mr. Constantine Ionides's house, and no apartment, save the great library, built by Mr. Philip Webb, gave any suggestion of a formal museum. Other collectors of Brighton—such as Mr. Willett and Mr. Borrodaile—might own collections and works of art which may be more complete in one direction or another, but Mr. Ionides's stood alone in its catholicity and, one may add, in its general interest.

The old masters extend from Giotto to Poussin—though it must be admitted that the beautiful "Coronation of the Virgin," attributed to the former master, cannot by reason of its very beauty and accomplishment be considered as otherwise than doubtful. Pure in condition, exquisite, and in all respects admirable, primitive though it is, it is a very noble and desirable work. Botticelli is represented by the tender and beautiful portrait of a lady—Smeralda di Bandinelli—which was at one time in the Pourtales collection and was latterly in the possession of Dante Gabriel Rossetti. It is painted in tempera and is in perfect condition. There are pictures by other Italian masters—doubtful perhaps in present attribution, though not in artistic beauty and value—as well as excellent works by Guardi and Tiepolo. The two pictures by Poussin are both fine. The first is the representation of Venus showing to Æneas his new suit of armour—a work described by Smith and engraved in outline in the "Galéries de Peintures Célèbres" (Vol. II. plate 161). The second is known as "Le Dessinateur," representing a man drawing among the solemn ruins of a temple. The brothers Le Nain are not well known or well seen in this country, so that the example of their work called "The Piper" possesses greater interest for us perhaps than its merits, considerable as they are, might be held to justify. A picture called "The River" is an admirable example of the early work of Van Goyen, the father of modern landscape, while the painter's artistic descendant, Ruysdael, is well seen in "The Mill," an excellent picture yet unusual alike in subject and treatment, in strong contrast with de Koninck's landscape of the broad and spreading plains of Holland. Figure pictures are not lacking in this Dutch section. There is here "The Expulsion of Hagar," by Rembrandt, a most important work alike as regards handling and arrangement. It is of brilliant execution, fine in colour and a marvel of fine mysterious lighting. There is a "Cottage Interior with a Boor Singing," by Brauwer (from the Hamilton Collection), a little masterpiece by Ter Borch, "The Guard Room," the "Hurdy-gurdy Player," by Ostade, and the magnificent "Studies of Cattle," by Paul Potter, which is well known to visitors to the Old Masters' Exhibitions at the Royal Academy.

It is strange that a man who loved these masters should care not less for modern French painting in its so-called realistic development. He seemed to arrive at this appreciation through his pictures of the romantic school, which he loved quite as well, and which he acquired with judgment and taste as great; the fine "Bather" of Diaz, the beautiful "Shepherdess," and the magnificent "Sawyers" by Millet (made more famous in this country through Mr. William Hole's etching of it), "The Storm" by Corot, and the brilliant sketch of "The Flood" by Rousseau, and particularly "The Good Samaritan" by Delacroix. Certainly he was not helped by his two Ingres, "The Odalisque" and "Henry IV. Playing with his Son." Yet we find him with "The Mud Cart," by Guillaume Régamez; the violently discussed "Ballet in 'Robert le Diable,'" by M. Degas; several pictures of great importance by M. Legros, notably "Les Demoiselles du Mois de Marie," a severe scene of Church service in monastic France, and "The Tinker;" "The Apple Market," by Leon Lhermitte. Besides these, there is the beautiful statuette—a full-length figure—of a young lady, his own daughter, reading, called "La Liseuse."

I have left myself no space to speak of the several fine pictures by Mr. G. F. Watts, nor of the Rossettis, of which "The Day Dream" was lent by Mr. Ionides to the Old Masters in 1883, nor of the gems, medals, coins, china, bric-à-brac, &c., which is all fine in quality and in condition, the whole constituting a collection worthy of being named for excellence and for value with the most reputable art bequests which have been made to the public. Mr. Ionides, by presenting it to England, proves once more the sentiment that animates the Greek colony which has made its home in this country.

THE STOBHILL HOSPITAL COMPETITION.

THE following letter from one of the architects whose design was awarded first prize by the assessors appears in the *Glasgow Herald*:—

14 Gray's Inn Square, London, W.C.:
July 18, 1900.

Sir,—When in Glasgow last week your issue of July 4, containing a report of the Parish Council meeting of the previous day, was brought under my notice. In that report the chairman is represented to have said that the adopted design commended itself to the majority of the Council, and while being "little, if at all, inferior to the first premiated design," had the additional advantage of costing considerably less money. What the chairman did not apparently say was that the first premiated design by Mr. Weir Schultz and myself was very strongly recommended for adoption by the professional assessors called in by the Council (Mr. J. J. Burnet, A.R.S.A., and Dr. MacKintosh, of the Western Infirmary, both experts in hospital planning and working), that in it there was a great deal of accommodation not provided for in the second premiated design adopted by the Council, and that this accommodation was largely, if not entirely, instrumental in raising the cost of the first design above that of the second. The accommodation was in the form of a bath block, administrative block for the inmates other than hospital patients, mess and dormitory accommodation for a full staff of servants, male and female, and covered connections between all parts of the hospital proper, including the first-floor wards. You also mention the sum which the second design is estimated to cost, namely, 163,431*l.* It is to be regretted, in connection with the question of cost, that the Parish Council have not thought fit to publish the official report of their professional assessors, for it is there clearly stated that, in the opinion of the Council's measurers, this amount was insufficient, and that the design would cost 221,000*l.* In this report the same gentleman also reduced the cost of our design from 313,000*l.* to 250,000*l.* The difference in cost, therefore, between the first and second designs, as shown by the assessors' report and by the valuation of Glasgow measurers, was 29,000*l.*, not a great amount when placed against the extra accommodation and the greater convenience of working arrangements provided for in the first design. I send herewith a copy of the assessors' report.—Yours truly,

EDWD. P. HOWARD, A.R.I.B.A., architect.

Assessors' Report.

167 St. Vincent Street, Glasgow:
May 30, 1900.

Dear Sir,—As instructed by your letter of the 24th ult., we have carefully examined the designs submitted for the proposed hospital at Stobhill. Before considering any of the twenty-four designs submitted we visited the site, noting particularly its character and main features, and keeping in view the instructions to competitors, the surveys of the ground issued by the board, and the correspondence which passed between you and the competitors. We carefully examined each separate design, and noted separately its appreciation of the site as shown by the distribution of buildings, as well as its method of meeting the administrative necessities of such a hospital. Having selected the six designs we considered most satisfactory, we submitted them to Messrs. John Dansken & Purdie, your measurers, and on receipt of their report we very carefully reconsidered every detail, with the result that we now beg to report that in our opinion Nos. 7, 23, 6 and 24 are entitled to the premiums offered by your board. The first (No. 7) commends itself to us, alike for its masterly treatment of the site and for its grasp of the essential features of hospital construction and administration; while architecturally its detail is exceedingly simple as compared with some of the other designs submitted, its conception and the appreciation it shows of modern hospital requirements seem to us to outweigh all other considerations. We would therefore recommend that the author of No. 7 be employed to carry out the work, and Nos. 23, 6 and 24 be awarded premiums in the order given. Messrs. John Dansken & Purdie report the cost of the execution of these designs to be:—No 7, 250,000*l.*; No. 23, 221,000*l.*; No. 6, 275,000*l.*; No. 24, 210,000*l.*—We are, dear sir, your obedient servants,

(Signed) {John James Burnet, A.R.S.A., architect.
{Donald J. Mackintosh.

ARCHITECTURAL ASSOCIATION OF IRELAND.

THE annual excursion of the Architectural Association took place on the 13th and 14th inst., the district being Kilkenny. The members journeyed from Kilkenny to Thomastown by train, where some hours were spent at that fine old Cistercian foundation, Jerpoint Abbey. The abbey is most picturesquely situated in the midst of the beautiful scenery of the river Nore and the architectural remains are in a wonderful state of preservation. Proceeding from Thomastown station, in the distance could be descried Dysart Castle, the charmingly situated birthplace of Bishop Berkeley, but time did not admit of a detour to visit it.

Returning from Jerpoint, the remainder of the time available was devoted to the town of Kilkenny, with numerous buildings of interest. The castle, the seat of the Marquis of Ormonde, was first on the list. A considerable time was spent in the picture gallery—one of the finest collections in Ireland, including some fine examples of Annibal Carracci and several beautiful portraits by Sir Peter Lely. The collection is, indeed, a uniquely rich one in both the Italian and Dutch schools.

The castle itself is not remarkable for very great architectural beauty, being more or less modern in character, but it is a picturesque monumental pile of castellated character.

St. Canice's Cathedral (restored some years ago by Sir Thomas Deane) was next visited. Subsequently the party made their way to the Black Abbey, a Dominican abbey, which has the rare distinction of having remained in the undisturbed possession of the Order throughout the troubled epochs of Irish history to this day.

The modern Roman Catholic Cathedral was viewed, and found of considerable interest. Considering the date of its erection (just prior to the Gothic revival), the design has remarkable merits, the interior being an agreeable surprise with its fine dignified proportions. The Archæological Museum was visited, and the quaint and simple last century Market Home. The Franciscan Abbey and the courthouse were all visited in turn, completing a most enjoyable trip. The headquarters were at the Club House Hotel, an excellent hostelry, which fully maintained its reputation in the thorough manner in which the excursion party were catered for.

The Association was much indebted to Mr. W. K. Clere, contractor, Kilkenny, who most kindly placed his time and local knowledge at the disposal of the party.

LIVERPOOL MEDICAL FACULTY.

THE annual report of the Medical Faculty, University College, Liverpool, states that the various classes in the medical curriculum had been carried on as efficiently as possible in the congested and uncomfortable conditions of the buildings. Last year the plans of the new building were devised and passed. Owing mainly to lack of funds, the scheme was divided for building purposes into three sections, the first of which, comprising anatomical museum and dissecting-room, is now being erected. The second section of the building will include, in addition to the main staircase, the laboratories for surgery and the lecture theatres; the third section, which will complete the block, will contain laboratories and smaller rooms necessary for teaching, investigation and administration of the several departments of the school. It is a matter for great regret that the second section of the building—the surgical and theatre block—has not already been begun. The completion of the whole would be expedited by the erection of this portion; the utility of the new anatomical block would be vastly increased; there would be convenience and economy in building operations, materials and labour; and rooms in the old building, which are urgently required for other departments, would be earlier set free. When the plans were considered in detail, contractors estimated that the whole building would cost about 30,000*l.* Of this amount promises had been received last winter of over 13,000*l.*, and a further welcome donation has since been received of 1,000*l.* from Mr. David Jardine. Each section of the building is approximately estimated to cost about 10,000*l*, so that expending that sum on the block at present in course of erection, there is in hand over 4,000*l.* towards the second section. The committee and the council do not feel justified in authorising the commencement of this portion of the building until the necessary funds are promised or forthcoming. A start will be made with the second, theatre block and surgical section, whenever they can be sure of an additional 6,000*l.*, or of the whole building when they can obtain 16,000*l.* The building in course of erection is expected to be ready for occupation next year. The anatomical department will then vacate and set free the old anatomy-room for the use of other departments, such as obstetrics and materia medica, whose needs are urgent. The new anatomical department is being built on the general plan of ultimate junction of the medical buildings with the Thompson-Yates laboratories on the one hand, and an immediate union with the courtyard and outbuildings, provided so generously by the late Mr. George Holt, on the other hand. Adequate provisions will then exist for practical work and museum study in anatomy. But a serious if temporary difficulty will exist when this block is occupied, on account of the absence of lecture-rooms and the difficulty of connecting, even for a time, the old anatomical theatre with the new dissecting-room and museum. The erection of the new botanical laboratories, the gift of Mr. W. P. Hartley, has already been begun. Besides forming a valuable addition to the scientific equipment of the college, the removal of botany to permanent quarters will relieve to a certain extent the departments of physics and zoology in the old college building.

ROYAL ARCHITECTURAL MUSEUM.

THE annual general meeting of the Royal Architectural Museum and Westminster School of Art was held at the museum in Tufton Street, Westminster, on Friday last, Mr. Aston Webb, A.R.A., presiding. Mr. Maurice B. Adams, hon. secretary, moved the adoption of the report, which stated that the Westminster School of Art continued to justify its high reputation as one of the most important schools of art in the Kingdom. In the examination held in 1899 sixty-four students of the school sat for examination, with the result that 14 per cent. attained the highest award ("excellent") against 7·4 per cent. for the whole of the United Kingdom, and only 14 per cent. failed, against 27·4 per cent. Two of the students were bracketed third amongst the 1,527 candidates who sat for drawing from the life, and were awarded Queen's prizes. In the National competition, in which all schools of art took part, medals and prizes were awarded to the following Westminster students:—William Batchelor, John Bart Higgins, Henry James Strutt, Edgar G. Perman and Isabel M. Smith. The subscriptions for the past year only amounted to 69*l.* 10*s.*, and it would be quite impossible for them to keep the Institution open if it were not for the School of Art, which brought in over 1,000*l.* a year in the way of fees. Mr. W. H. Seth-Smith seconded the motion, and the report was adopted. The chairman nominated Mr. W. Emerson, president of the Royal Institute of British Architects, as president of the Institution in place of the late Duke of Westminster. Mr. H. Pollen seconded the motion, which was unanimously agreed to.

THE GUILDHALL EXHIBITIONS.

THE director of the Guildhall Art Gallery (Mr. A. G. Temple), in a report upon the popularity of art loan exhibitions at the Guildhall, states that the first loan exhibition promoted by the Corporation was held in 1890, consisting of works of the British school and a selection of examples of the early Flemish, Dutch and Italian masters. This was visited by 109,383 persons. The second exhibition, which was similar in character, was opened in 1892, and attracted to the Guildhall Gallery 236,362 persons. The next year the third of the exhibitions took place, and it was visited by 300,366 persons. In the following year the loan exhibition was visited by 262,810 persons. The fifth collection was held in 1896, consisting entirely of representative works in water-colours by artists of the British school. Visitors to the number of 124,271 passed through the turnstiles. In 1897 the sixth exhibition, illustrative of the artists of the British school who had flourished since Queen Victoria ascended the throne, received the patronage of 248,093 visitors. In the following year an exhibition of works of the French school of the eighteenth and nineteenth centuries was visited by 206,746 persons. The eighth loan collection, which was mainly composed of the works of Turner, attracted to the Guildhall 223,132 lovers of pictures. The exhibition which has just closed its doors was visited by over 200,000 persons. The series of eight exhibitions have been visited by 1,711,164 persons, while the value of the art treasures displayed is estimated at 1,703,477*l.* The permanent collection at the Guildhall has been visited by three-quarters of a million persons, making a grand total of 2,362,680*l.* The total expenses have been 9,816*l.* 4*s.* 5*d.*, less 5,255*l.* received in respect of catalogues, thus reducing the net cost to the Corporation of 4,560*l.* 7*s.* 11*d.*

NOTES AND COMMENTS.

The late Sir Thomas Farrell, president of the Royal Hibernian Academy, was a shy and modest man. He was, therefore, not favourable to the inevitable public funeral with which a deceased artist of his rank was sure to be distinguished, and he made arrangements accordingly. But his brother Academicians could not allow it to be supposed they were indifferent to their late President, or deliberately refrained from paying his remains the customary respect. The following resolution was, therefore, unanimously agreed upon at their last quarterly meeting:—"The Academy desires to place on record its deep sense of the loss it has sustained in the death of its president, Sir Thomas Farrell, who endeared himself to all its members by his honourable and straightforward character and by his courteous and kindly demeanour towards them throughout his life-long connection with their body, commencing as member in the year 1860, continuing as treasurer from 1870 to 1893, and from that date until the present time as its President, during which long period he evinced his devotion to the Academy by the most indefatigable zeal in its interests and by continuous and minute attention to its concerns. The Academy regrets that family arrangements precluded its members from exercising the privilege of paying the last tribute of respect to the deceased by accompanying his remains to the grave, and publicly testifying by their presence on that occasion the honour and esteem in which they held him."

The Rochester Bridge Wardens form an ancient corporation dating from the fourteenth century. Their jurisdiction is not confined to any particular bridge, and extends far beyond Rochester. Their power is at the present time suggested when it is known that it depends upon the wardens whether Aylesford is to have a suitable bridge across the Medway. The town no doubt possesses a bridge, but the waterways are altogether inadequate, and in consequence not only are some of the lands along the river flooded, but factories and manufactories are swamped, and numberless houses and tenements occupied by the working classes are seriously injured. The County Council have had the subject under consideration, and in 1892 it was resolved that the works for a new bridge could be undertaken if half the total estimated cost were contributed by the Rochester Bridge Wardens, a further sum of 10,000*l.* to be contributed from other sources, and the County Council to be put to no expense in acquiring necessary land for approaches. The Town Council of Maidstone have offered to vote 2,000*l.*, and the Lower Medway Navigation Company 3,000*l.*, and it is expected private contributions will come in amounting to 500*l.* In 1896 the Bridge Wardens said they were prepared to give aid amounting to 16,000*l.* That sum is less than was anticipated, and the local authorities have been endeavouring to persuade the Wardens to increase it. The Wardens have now said they will reconsider the subject, but they desire in the first place to know whether the Kent County Council are prepared to take the responsibility of removing the existing Aylesford Bridge and of constructing and maintaining a new bridge there, with the necessary approaches; and whether they would be willing to forward the plans for such a structure for the approval of the Bridge Wardens, together with an estimate of the total expense. The difficulty which is found in arriving at an agreement on the subject recalls those of the Mediæval builders, who were compelled to send monks to beg donations throughout the country, as if a bridge resembled a church.

In one of the letters from London which related the incidents of Court life in the eighteenth century it is recorded:—"Some say that Carnarvon, on account of his having ground to build in St. James's Park, is to pave the highway from Devonshire House to Hyde Park Corner, and to allow 100*l.* per annum for maintaining and repairing it." If the statement could be accepted as true, and it undoubtedly appears very probable, it would explain the narrowness of Piccadilly, which surprises all visitors to the Metropolis. Lord Carnarvon would naturally desire to have the roadway diminished as far as possible in order to save expense. But he caused an inconvenience by his economy, which has now become intolerable. If it were not for the patience and tact displayed by the police it would be impossible to prevent accidents from continually occurring in Piccadilly. There is only one way out of the difficulty, and that is by widening the roadway. For that purpose it will be necessary to take a strip off the Green Park. At present the width of Piccadilly between Hyde Park Corner and Walsingham House varies from 68 feet to 100 feet. By the proposed arrangement the greatest width would be 170 feet. The cost of setting back the Park railings and paving the widened carriageway and footway would probably amount to 30,000*l.* As the improvements committee of the London County Council are in favour of the alteration there is no doubt the Council will approve of a project which has become indispensable.

There are so many interests involved in the proposed Westminster Improvements scheme, powerful opposition to it must have been anticipated. The London County Council, who are promoting the Bill, have made various concessions; but when we find Mr. Jackson, R.A., declaring that the line of the proposed street would destroy the surroundings of the Houses of Parliament and the Abbey, would be awry with that of the Houses of Parliament and would defeat Sir Charles Barry's intention, as the vista would miss St. Stephen's Porch and part of the Houses of Parliament, the committee of the House of Lords were bound to insist on some modification. Their lordships' decision was as follows:—"The committee find the preamble of the Bill is proved, but they are unanimously of opinion that the present Westminster scheme and that for the proposed approaches to the new Lambeth Bridge, together with the widening and necessary alterations to the Grosvenor Road, should have been presented to Parliament as one measure. The committee cannot approve of the proposed thoroughfare from Old Palace Yard to Lambeth Bridge as contained in the Bill, but are willing to agree to an alternative plan suggested, that the improvement should start with a straight road from the Houses of Parliament to the end of the Victoria Tower Gardens, and from thence by a curve to join the proposed widened Grosvenor Road, so as not to take any appreciable part of the Tower Gardens." The Parliamentary committee of the London County Council proposed on Tuesday that the alteration suggested by the select committee of the House of Lords should not be accepted, but by a majority it was decided that the Bill should be proceeded with, subject to the select committee agreeing to the new street being carried out in general accordance with the plans approved by the Council in July 1899. In spite of the submission of the Council, it is, however, doubtful whether the Bill can become law in the present session.

The Committee for the Survey of the Memorials of Greater London, of which Mr. C. R. Ashbee is chairman, again appeals for support, which can be given in various forms. In extending the work of the Survey from the East to the West End it is necessary to have the assistance not only of the guardians of those amenities which it is desired to see preserved, but of all who are interested in doing this and those who would prefer to see London as a beautiful rather than an ugly city, great for its history rather than its modernity. The appeal is therefore made, not so much on antiquarian grounds as on that of good citizenship, for help in the maintenance of the things that are beautiful or have historic interest in Greater London. The work is to record these things with a view to making it easier to preserve them, and to this end help of two kinds is sought:—(1) An increased honorary membership, a minimum payment of 1*l.* 1*s.* annually entitling to all the committee's publications; and (2) the active help of young architects, draughtsmen, painters and amateur photographers, who would give their labour in lieu of subscription.

ILLUSTRATIONS.

DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY:
PERSPECTIVE VIEW. HALF ELEVATION. FIRST FLOOR PLAN.

SECOND PREMIATED DESIGN FOR THE LIVERPOOL DOCK OFFICES:
PERSPECTIVE VIEW. PLANS.

ROYAL ARCHÆOLOGICAL INSTITUTE.

On Wednesday in last week the annual meeting of the Royal Archæological Institute of Great Britain and Ireland was opened in the Mansion House, Dublin.

Alderman Flanagan expressed regret that the Lord Mayor was unable to be present owing to pressing business in London. His lordship, however, had sent messages of welcome to the Institute. He hoped they would have a pleasant time and that they would go away with agreeable recollections of their visit.

The Earl of Rosse, as president of the meeting, took the chair, and said he wished, on behalf of the members of the Royal Irish Academy and the other gentlemen who took an interest in their favourite science, to bid the members of the Institute a hearty welcome, and to express the hope that their visit might leave pleasant recollections. He trusted there might be less of the unpleasant weather which had been experienced lately, and that they would be able to carry out in a satisfactory manner the excursions set forth on their programme. Much as he (the speaker) was interested in the ruins which were scattered over Ireland, he could make no claim to any special acquaintance with them, and he regretted that he could not go into the subject of Irish antiquities in such a manner as he should wish. He was sure, however, many antiquarians who were gathered at that meeting would furnish the visitors with the information they might desire. It had been said that Ireland bore indications of having in remote times arrived at a state of civilisation much in advance of adjacent parts of Europe. Not only through the discovery of the more easily transported works of art, such as were to be found in the National Museum of Ireland was that view supported, but also by the numerous architectural remains to be found scattered over the island which have been largely executed by local handicraftsmen. It might be said that during the wars and other troubles which prevailed in the more populous places the real workers in art might have retired to the more remote localities to pursue their avocations. Members, too, of religious orders, who were generally workers in or patrons of art may naturally have taken refuge in such places for quiet and safety from persecution and plunder. Again, it might be remarked that the more progressive a community is in population and commercial activity, the more liable are ancient remains to be swept away. With the increase of population there was an irresistible tendency to the utilisation of disused ancient structures to provide material for new buildings. Probably there was no more ancient city in the British islands than London, and yet how little that was old now remained on the surface. With regard to Rome also, there was not much now left of its ancient state. In Ireland there were many places now deserted which must have been at one time of considerable importance. Owing to the comparative remoteness of its situation Ireland did not seem to have been invaded by so many different nationalities as England. The Danes or Northerns gave much trouble in some parts of Ireland. They were for some time in possession of Dublin, and had their town or quarter where the present Royal Barracks are situated. A bloody battle was, however, fought between them and the older inhabitants under Brian Boru at Clontarf. The speaker then referred to the interesting ecclesiastical and other remains to be found on the islands of Arran, and said they were very well worthy of a visit. In the larger and middle islands of Arran there were some seven or eight forts, said to date from the first century. They were built of dry unhewn stone, the walls being from 12 to 20 feet high. The primitive churches of the fifth and sixth centuries were very small and little ornate, while the Cromwellian castle was representative of the work of more recent times. It might be further remarked of Arran, as of other places on the west coast, that the absence of timber tended to the use of stone. With regard to forests, he said they appeared to have remained in Ireland widely distributed until a comparatively recent date. Even in the sixteenth and seventeenth centuries it was stated that a squirrel could hop from tree to tree from Birr to Portumna, a distance of some fourteen miles, and also that the danger was great of journeying from Birr to Banaghar, as the woods were full of rogues and rapparees, and that this state of things was only put an end to by the establishment of glass manufacture, which terminated when the supply of wood for the furnaces was exhausted. Dealing with the bogs to be seen in Ireland, he said that in King's County one might walk twenty miles in a straight line over nearly continuous bog, the mere fringes of which had yet been consumed for fuel. Many things had been preserved in these bogs. In the museum they found ancient "dug-out" canoes, and also articles of clothing, and even butter. In one case it was stated that the body of a woman was discovered in a bog in a perfect state of preservation, so much so that an inquest was held and a verdict of "Found dead" returned. Some one had since remarked that it was not correct to have given the body Christian burial, as the woman had died in pre-Christian times. Speaking of Irish architectural remains, he said that prominent among them was the fine cathedral in the Pointed style on the Rock of Cashel, with Cormac's Chapel joined to it. The Round Towers of Ireland should also be visited, for they were a unique and striking feature of ancient architecture. The members of the Institute would also have an opportunity of examining the fine collection of antiquities in the National Museum. Among them were gold ornaments, the bell of St. Patrick, the Cross of Cong, and many remains of the Stone and Bronze Ages. Amongst the manuscripts which they would also have an opportunity of seeing were the Book of Kells, the Book of Leinster, the Book of Ballymote, and other works that showed a high standard of skill in illumination. In conclusion, he again hoped that the visit of the Institute would be a pleasant and successful one.

Sir Henry Howorth, M.P., president of the Institute, said they had come to visit Ireland with the greatest delight and pleasure. It was a little corner of the Empire, which seemed to him more steeped in poetry and drama than almost any other part of the world. Many of them who had never visited the country had had opportunities of testing the kindliness of Irish hearts. They had seen Irishmen in the House of Commons, and, notwithstanding the turbulent discussions that often took place, they were really fond of each other, and they would not exchange some of the witty if somewhat difficult representatives of Ireland in other respects for all the dull creatures who came from some other parts of the Empire. They had come to Ireland to visit a realm of archæology that was new and foreign to many of them—the land in which Wilde and Petrie wrote their great works—and he was glad to see among them Miss Stokes, a lady who had gained celebrity in that department of research. With regard to their chairman, he said they could find no one more qualified to preside than was Lord Rosse. He was not merely a good Irish landlord who lived among his own people, but he represented the science of these realms in its best form. He and his father were both distinguished astronomers. On behalf of the Institute he (Sir Henry) expressed their hearty thanks to Lord Rosse for presiding and for the address which he had delivered.

The Earl of Rosse expressed his acknowledgments and suggested in connection with their tours through Dublin that the members of the Institute should visit the Botanic and Zoological Gardens.

After the meeting the members of the Institute, under the guidance of Sir Thomas Drew, visited St. Patrick's Cathedral, Dublin Castle, and Trinity College, where they spent a half-hour in the library examining the MSS. (including the Book of Kells) and objects of antiquarian interest, the Ogham Stones, the Ancient Harp erroneously said to have belonged to Brian Boroimhe and the college buildings. The visitors were received in the library by Dr. Percival Wright. In the dining-room the college plate was displayed and briefly described by Mr. J. R. Garstin, who also made reference to pictures on the walls, pointing out the portrait of the late Earl of Rosse. The examination hall and college chapel were also visited.

In the evening the Antiquarian Section met in the Royal Irish Academy House, Dawson Street. Sir Thomas Drew, R.H A., chairman of the section, delivered an address entitled "Dublin for Archæologists." Mr. George Coffey, M.R.I.A., also read a paper which dealt with "Optical Illusions in Mediæval Architecture."

On the following day there was an excursion to the Round Tower and the ruins of the Archbishop's palace at Swords. The Tower and ruins were described by Rev. Canon Twigg, D.D. They subsequently drove to Malahide and saw the castle and also the ruined abbey church. At the castle they were received by Mr. Dillon, agent to Lord Talbot de Malahide, and Rev. Mr. Lindsay, rector. St. Doulough's was next visited, and an inspection made of the church there, which is an interesting vaulted building. The tourists also saw St. Doulough's Well, and subsequently drove to St. Doulough's Park. At night the members of the Institute were the guests of the Royal Irish Academy and the Royal Society of Antiquaries at a conversazione in the Science and Art Museum.

The next day's excursion was to Trim, Newtown Abbey and the Hill of Tara. The ancient abbey of SS. Peter and Paul, Newtown, Trim, was described by the Rev. Canon Healy, LL.D. The building dates back to 1206, when it was founded by Bishop Simon Rochfort, who removed his see thence from Clonard, and adopted the title of Bishop of Meath. The old walls have been sadly neglected, and have had to stand other ravages than those of time, as it was a custom in bygone days for humble people to mark the graves of their deceased friends by stones pulled out of the crumbling walls, so that in this way the process of decay and dilapidation was considerably hastened. The party having given the abbey a good share of their attention, and a close inspection of the disjointed parts of it still remaining, retraced their steps towards the "Ford of the Elder Bushes," there not being time within the specified limits of the day's tour to visit Bective Abbey, a few miles further away. The party immediately on their return from Trim were conducted to the parish church, in the ruined chancel of which are some interesting slabs and monuments from the old church. This building, which has a picturesque ivy-clad tower, was built in 1449 by the Lord Lieutenant, Richard, Duke of York. The nave was rebuilt in 1803, and the present short chancel is of modern construction, but some detached fragments still remain of an earlier chancel or chapel. Next, the party found themselves under the frowning walls of King John's Castle. The castle is one of the best specimens of Anglo-Norman military architecture to be seen in any part of Ireland, and has a most interesting history. It was founded about 1170 by Hugh de Lacy, who came over with Strongbow in the reign of Henry II., and had bestowed upon him the lordship of Meath. The founder of this castle had built two others—one at Kells, and another at Durrow, in the Queen's County. At the building of the latter he met his death. While superintending the work of erection a man disguised as a workman stepped out from a hiding-place and killed him on the spot with a blow of a hatchet, subsequently making good his escape. As an instance of history repeating itself, the rev. Canon went on to say that one hundred years ago Lord Norbury was killed in the very same locality of Durrow, and under somewhat similar circumstances. He was also building a castle, and was attacked by his own workmen and killed. The castle of Trim was commonly called by the people of the locality King John's Castle, but, as a matter of fact, that monarch never had anything to say to it at all, although on one occasion he spent a night in the neighbourhood in 1210. A number of interesting historical events, however, had taken place in connection with the castle. In 1399 Richard II. visited the place, and before returning to England, on hearing that Henry of Bolingbroke had landed on the coast of Yorkshire, the king imprisoned in the castle as hostages the young Duke of Gloucester and Prince Henry (afterwards Henry V.). Several Parliaments had also been held there, at some of which a number of strange enactments were passed concerning the way in which the Irish should wear their beards. In 1641 the castle was captured, first by the Irish, and subsequently retaken by the Cromwellian troopers, to whose cannon it primarily owed its dilapidation. Adjoining the castle on the other side of the river was a ruin known as St. Mary's Abbey. It was formerly the castle of the Talbots, and in more recent years became the diocesan school of Meath, where the Duke of Wellington and Sir Wm. Rowan Hamilton, the astronomer, received their early education. The yellow steeple close by was the sole relic remaining of the convent of St. Mary. The party next visited the Hill of Tara, but owing to the lateness of the hour there was only a very short interval in which to explore the place. The scene of the recent excavations attracted the most attention, and expressions of condemnation were heard on all sides.

Mr. Robert Cochrane, F.S.A., read a number of extracts descriptive of Tara taken from a pamphlet compiled for the visit of the Royal Society of Antiquaries in 1895. He pointed out that according to the chronology of the Four Masters the Hill was first used as a royal residence in the year 80 B.C., and had continued to be used as such for a period of 533 years, during which it had been occupied by no less than 142 kings. It was finally abandoned during the reign of King Dermot on account of the curse of St. Ruadham, which forbade that any king or queen should ever inhabit it again, and ordained that it should remain waste for evermore. Dealing with the question of the excavations, Mr. Cochrane said that Mr. Groom, the English gentleman who conducted them, purported to be guided by masonic tradition in search of the Ark of the Covenant, but he (Mr. Cochrane) did not think he had any ground beyond mere fancy for assuming it was there. The only result of the excavations was the discovery of some underground formations not previously known, and a stone chamber which bore evidences of having been used as a cooking apartment. A gold ring, some coins of the reign of Constantine, and a quantity of bones had also been thrown up, but in such a condition that they were useless for any scientific purpose. The ground on which the excavations were made belonged to Mr. Briscoe, who had given Mr. Groom his own sweet will of the place, with the result that great damage had been done to what was known as the King's Chair, or Rath of the Synods. On the other side of the fence the property belonged to Earl Russell, who refused to allow any excavations unless conducted under proper archæological supervision. Mr. Cochrane then explained the situation of the Lia Fail, or Stone of Destiny, the Hall of the Assembly, and other points of interest.

Sir Henry Howorth, M.P., said it was his duty, as president of the Institute, to protest with all the emphasis he could command against the great archæological crime that they were witnesses of at that moment. It was a perfectly monstrous thing, even in the case of monuments that were of less general interest, that those who were the custodians of them should tolerate such a wrong as had been done here. Interference with such monuments dealing with the history of the country at a most critical and difficult period should not be tolerated, unless it was conducted with the greatest scientific care of every little fact that might come to light. There they had the spade put into the ground in the most reckless and outrageous way, leaving everything they saw around in a state of destruction. It was sorrowful to think that the Hill of Tara—the most famous of all archæological monuments—should be subject to such outrageous treatment in pursuit of a fancy which was childish and outside the sphere of sane inquiry. Sir John Dillon had done his best to preserve something of what he had seen while the excavations were in progress, and he had taken several photographs and drawings, but unfortunately what they needed and what they would have most liked to have had was the sifting of every spadeful of earth that was taken away and recklessly removed. They were standing really in the presence of the greatest act of vandalism that had occurred in his long memory, and he could not help protesting in the strongest possible language against the thing that had been done there. He hoped his words would have the effect of preventing their repetition.

Sir John Dillon added a few words and displayed the photographs and drawings he had made, adding that the earth had been filled in as soon as the excavations were made, and there was no scientific supervision at all.

In the evening a conversazione was given by the Lord Mayor and Lady Mayoress at the Mansion House. About 500 invitations were issued and accepted. In the round room were exhibited many of the ancient documents in the possession of the Dublin Corporation.

A large party went next morning to Christ Church Cathedral where the history and structure of the edifice were fully explained by Sir Thomas Drew, R.H.A. He said that the real story of the cathedral could not be found in books, and much that had been written about it was very unsatisfactory. It had been a neglected church for two centuries, and, in fact, its real history had not been written until 1870, when its restoration took place. It was one of the marvellous sights of their city to see this church built originally in the early part of the eleventh century standing to this day so complete, and representing so exactly what it was in the fourteenth century. Since then twelve or fourteen of the other parish churches had disappeared—all, indeed, except St. Audeon's—and yet the old edifice still remained, and with its very appearance told much of its own history. The difference between St. Patrick's and Christ Church Cathedrals was this. It was all built in one period and represented but one school of architecture; and interest in it was, therefore, soon exhausted, while Christ Church Cathedral had undergone so many mutations and changes that it was full of surprises and told its own story in its own way. Many people supposed that there was no interest attached to this cathedral, and it had been referred to as "a new church built by Mr. Street, the architect." But all the same it had a very ancient and venerable history. It was originally a Danish church, and was founded by Sitrick in the year 1038, the only record of its first building being found in the Black Book of Christ Church, which was still preserved amongst the treasures of the cathedral. Sir Thomas Drew went on to describe the various stages of building until the cathedral was completed in the Anglo-Norman style during the close of the twelfth century, beyond which no part of the present structure was of greater antiquity. Sufficient remained of the old edifice, however, to show what the design must have been. The history of the church for a long time was a history of disasters, the first big one being in the reign of Queen Elizabeth. Although the site was a high one, it, strange to say, rested on a peat-bog foundation, and the consequence was that the church slid on its foundations, the roof fell in, and one side of the building was entirely ruined. The result was that the rubbish lay on the floor until, when it came to Mr. Street's turn to rebuild the cathedral, large patches of the ornamental tiling were found intact, so that it was possible to copy the design of the old flooring with a great deal of fidelity. Reforming Archbishop Brown, of Queen Elizabeth's age, burned all the relics of the cathedral, including the Staff of Jesus, said to have belonged to St. Patrick and a work of inestimable value, and Cromwell's troopers did the rest of the work of demolition. The church remained in ruins up to modern times. In his own memory the nave was an open space, where people walked up and down and did their business, and, generally speaking, the place presented a very woebegone, wretched appearance until Mr. Henry Roe, the well-known distiller, who often passed the spot on the way to his business, conceived the noble idea of restoring the cathedral. The work, which cost 220,000*l.*, was entrusted to Mr. G. E. Street, the architect already mentioned, and thus it was that through Mr. Roe's generosity they were enabled to see Christ Church now, at least, so far as its interior was concerned, as it may have looked in former times. He did not think that in any respect or detail the outside of the present building was remindful of what the ancient church had been. It was Mr. Street's architecture, and his only. Sir Thomas Drew then briefly referred to the treasures and curiosities preserved in the cathedral, mentioning the fine peal of bells, the collection of eighteenth-century gold and silver plate, the valuable assortment of eighteenth-century music and manuscripts, including the Black Book and White Books of the cathedral—both extremely valuable, and giving perhaps the only accurate history of the boundaries of ancient Dublin. For this reason they were of considerable legal value, and had often been referred to in courts of law. The party then visited the crypt of the cathedral, where a considerable time was spent in examining the old monuments and other curiosities, including the Lombard tablet and its strange inscription, over which an animated discussion was raised, in which Sir Henry Howorth, Sir Thomas Drew and Mr. Ribton Garstin took a leading part. The cathedral treasures were then inspected in the dean's room, and excited much interest amongst the visitors.

Sir Henry Howorth returned the thanks of the members of the Institute present to Sir Thomas Drew for his interesting description of the building, and for his kindness in explaining the many things they had seen to interest them. After the strong phrases he had used on the previous day at the Hill of Tara, it was a pleasant task for him now to say how thankful they should all be that this most interesting place had excited the attention as it had done of two such men as Mr. Roe and Mr. Street.

The visitors then proceeded to the Royal Hospital, Kilmainham, where they were received by Captain Fielding, who afforded them an opportunity of inspecting the great hall, with all its fine historic pictures, arms, armour, &c., and then conducted them to the chapel.

The members next drove to the Record Office, where they were received by Mr. H. F. Berry, who exhibited the old manuscripts and other objects of interest which are treasured there with the greatest care. At the Custom House the visitors were received in the board-room by the chairman of the Board of Works, Mr. Robertson, Mr. R. O'Shaghnessy and Mr. Cochrane. The Chairman and Mr. Cochrane exhibited volumes of photographs of the national monuments in various parts of Ireland—the Rock of Cashel, ruins of abbeys, churches, monasteries, round towers, and also photographs of the Science and Art Museum, built under the direction of the Board.

The Chairman stated that the Board had under their care the ancient and national monuments of Ireland, under the Church of Ireland Act, 1867, the Ancient Monuments Protection Act, 1882, and the Ancient Monuments Amendment Act, 1892. They were greatly indebted for the assistance they received from representatives of the Royal Irish Academy and the Royal Society of Antiquaries. He also stated that they held periodical meetings to exchange views with respect to the vesting and preservation of monuments. He expressed appreciation of this visit from the members of the Institute.

In the Royal Irish Academy Dr. P. W. Joyce delivered an address on "The Truthfulness of Ancient Irish Records." He said he proposed to prove that the ancient Irish records, from Christian times at least, were absolutely trustworthy, with such cautions and limitations as were always necessary. Of Irish historical records there were many classes—historic and romantic tales, annals and genealogies were the main foundation on which modern writers of Irish ancient history had to depend. Modern writers of all kinds had to depend on the statements of writers of the Middle Ages, which so far as testimony was concerned were all the same character as Irish histories—a mixture of truth, imagination and exaggeration. Ancient Irish annals and genealogies were more trustworthy than those of any other nation of Europe—at least from the fourth or fifth century. In Ireland there were special annalists who have made it their business to record remarkable events, and as a rule they admitted into their records only events of their own lifetime, or which had been actually witnessed by their predecessors. The truth of the records of these ancient Irish annals was to be tested by physical phenomena, the testimonies of foreign writers and the consistency of the writers themselves. The solar eclipse of 664 was mentioned by the Venerable Bede as having occurred on May 3. In the record of an Irish writer it was put down as having taken place on May 1, 664. It would be safe to say that the testimony of Bede would be accepted by the majority of people as the most reliable. It had, however, been proved that the Irish scribe was absolutely correct. He gave the very hour of the occurrence of the eclipse. In the whole of the Irish annals, extending from 490 to 1066, there were about twenty-five records of eclipses. They were collected in O'Donovan's "Annals of the Four Masters," and were all accurately stated, showing that they were recorded by actual observers. Dr Joyce referred to Froissart and other foreign writers for the purpose of showing the truth and consistency of Irish annals, and in conclusion he said their uniform accuracy and agreement had drawn admiration and warm acknowledgment from modern archæologists.

Kells was visited on Monday, when the Celtic crosses, the stone-roofed oratory and the round tower were examined with interest. At the evening meeting Miss Margaret Stokes read a paper on "The Signs of the Zodiac on the Base of Muridach's Cross at Monasterboice," and Mr. J. R. Garstin one on "Some Antiquities of Drogheda."

The latter paper might be considered as a programme for the visit on Tuesday, in which the remains in Drogheda and the picturesque abbey of Mellifont, a few miles distant, were the principal objects. At the evening meeting Sir Henry Howorth referred to the success of the tour, and expressed the gratitude of the Institute for the hospitality shown to the members.

Votes of thanks were passed to the Royal Irish Academy for the use of their rooms, the Society of Antiquaries, the local presidents, secretaries, committees, and others, who had organised the excursions, and to the gentlemen who had acted as guides.

OXFORD COLLEGES.*

WORCESTER COLLEGE was founded in 1714 by Sir Thomas Cookes, Bart., of Bentley, Worcestershire, on the site of an ancient foundation for religious learning. John Giffarde, Baron of Brimesfield, in 1283 founded New Gloucester Hall as a house of study in Oxford for thirteen Benedictine monks from Gloucestershire, but it was shortly afterwards thrown open to all the Benedictine foundations in England, each having its separate lodgings or tenements, which buildings still remain. On the north side of the entrance to the college may also be seen the original gateway leading to the old hall. This, the first monastic college in Oxford, fell into the hands of the Crown at the Dissolution (1539), Henry VIII. transferring it to his new See at Oxford, and for some time it was the palace of Bishop King (first Bishop of Oxford). The See was transferred later on to the church of St. Frideswide, the college remaining in the hands of the Crown until 1559, when it was granted by Queen Elizabeth to William Doddington. In 1560, through the liberality of Sir Thomas White, it was purchased and conveyed to the President and Fellows of St. John's College, under the title of St. John Baptist's Hall. This foundation experienced varying success, at one time having as many as one hundred members, but towards the end of the seventeenth century it had no students matriculated for four years. Dr. Benjamin Woodroffe, canon of Christ Church, was the last principal, being appointed in 1692. He tried various schemes to revive the fortunes of the Hall, one being to form it into a college for Greek students, but this did not long survive. About this time, hearing that Sir Thomas Cookes wished to bequeath funds for the foundation of a college in Oxford, he secured the bequest for this Hall, but before the freehold could be obtained both he and Sir Thomas died. Ultimately the trustees purchased St. John Baptist's Hall and founded Worcester College. The charter dates from July 14, 1714 (sixteen days before the death of Queen Anne and 168 years ago to-day). Dr. Clarke, of All Souls, was a great benefactor to Worcester College, having given not only financial aid but also his valuable library and the designs for the college buildings.

The chapel, built about 1784-90, on the right of the entrance, is approached from a stone-vaulted piazza. In 1864-70 it was elaborately decorated from the designs of the late Mr. Burges in the Italian Renaissance style, and is perhaps one of the finest decorated chapels and best examples of iconography in the country. The scheme is symbolical of Nature in the "Benedicite" and Man in the "Te Deum" representing Creation praising God in concert. The inlaid woodwork and the mosaic floor are particularly good. The sacred volumes on the lectern, presented by the Rev. C. H. V. Daniel and designed by Mr. Burges, the panels of which were brought from Italy by Mr. Daniel, are very beautiful and worthy of especial note.

The hall at the south end of the piazza was completed in 1784, the inlaid walnut panelling, designed by Mr. Burges, and the fine Italian carved fireplace being added in 1877. The ceiling is a good specimen of eighteenth-century work. On the walls are portraits of Sir Thomas Cookes (founder), by Kneller, Dr. Clarke, Dr. Blechynden (first provost), Dr. Cotton (late provost), and others. There is also a large picture of "A Fish Market," by Snyders, and a fine bust of De Quincey. The library is over the piazza. It was founded by Dr. Clarke and finished in 1744. It contains a very valuable collection of books, the original designs for Whitehall by Inigo Jones, and many archæological treasures. The buildings on the north side of the quadrangle were erected at intervals between 1753 and 1773, while on the south side are the old Benedictine houses already referred to. The gardens claim a visit, if only for the back view of the picturesque old monastic buildings; they are well laid out and form a delightful retreat from the busy hum of city life.

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* A paper read by Mr. Frank E. Spiers, before the members of the Upper Norwood Athenæum at Oxford, on July 14.

St. John's College.

St. John's College was founded in 1555 and dedicated "To the praise and honour of God, of the Blessed Virgin Mary, His Mother, and St. John the Baptist," by Sir Thomas White, of Rickmansworth, alderman, and twice Lord Mayor of London (born 1492, died 1567). A second and enlarged charter was granted by Queen Mary in 1558. Sir Thomas was a Muscovy merchant and member of the Merchant Taylors' Guild in London. He is thought to have been influenced in the foundation of the college by his desire as a patron of the schools of this guild to advance the education of the students of the school, he having established a connection between the two institutions that still exists—ninety-three scholarships being open to boys of the Merchant Taylors' School.

St. John's College occupies the site of St. Bernard's College, founded in 1437 by Archbishop Chichele for the Bernardine branch of Cistercian monks. Upon the suppression of monastic establishments the college was dissolved, and in 1546 granted by Henry VIII. to the Chapter of Christ Church, who nine years later conveyed it to Sir Thos. White.

The front building, facing the terrace walk (1596) in St. Giles's Street, is a portion of Chichele's foundation, the upper storey having been added about 1662. Over the gateway is the statue of St. Bernard in its original canopied niche, and the arms of the founder.

The hall, on the north side of the old quadrangle, was built in 1502, and formed the refectory of the Cistercian monks. The interior underwent considerable alterations in the eighteenth century. It has a fine arched roof and a screen of Portland stone. Over the fireplace is a strange picture of St. John the Baptist, after Raphael, in scagliola, by Lambertus Gorius, dated 1759, and on the walls are portraits of Sir Thos. White (founder), Archbishop Laud (president, 1611-21), Archbishop Juxon (president, 1621-32), George III. (by Ramsay), Sir Wm. Paddy, Dr. Rawlinson, Dr. John Case (1590), and other members and benefactors.

The buildings west of the hall, including the kitchen, were erected in 1613. Beneath the kitchen is a fine vaulted cellar, entered from the buttery, dating from the fifteenth century.

The chapel was built for the Cistercians and was consecrated in 1530 by Robert King, titular Bishop of Rheon, last Abbot of Osney and first Bishop of Oxford. It suffered considerably at the hands of the Puritans, but was restored in 1662, when the present windows were inserted. On the north side is a mortuary chapel, built in 1662 by Dr. Baylie (president 1632-48 and 1660-67) to receive the body of his son. It was restored in 1843 under the direction of Mr. Blore, who replaced the old ceiling of plaster by the present beautiful fern tracery. The urn containing Rawlinson's heart is also in the Baylie Chapel. The chapel was redecorated in 1873, when memorial windows by Clayton & Bell were filled in to Dr. Mansel (Dean of St. Paul's and formerly tutor of the college), Dr. Wynter (president for forty-three years) and the Rev. R. Deane (scholar and tutor of the college), all of whom died in the previous year. The present east window, by C. E. Kempe (1890), and the reredos (1892) were given by the fellows of the college. Under the altar repose the remains of Archbishops Laud and Juxon and the founder.

The south side of the old quadrangle dates from 1437 (Chichele's foundation), the upper storey having been added in 1662. The President's lodgings, separating the two quadrangles, were partly built in 1437 and completed in 1597 after the refoundation by Sir Thomas White.

The inner or Canterbury quadrangle is approached through a passage with fine vaulted ceiling of fan tracery.

On the right or south side is the old library built by Sir Thomas White and completed in 1596. This quadrangle was completed in 1631-36 by the addition of the east wing of the library and the rooms on the north side, through the munificence of Archbishop Laud, from designs by Inigo Jones, who has succeeded in introducing a happy blending of Gothic and Italian styles. On the east and west sides are basilican colonnades over the centre of which are bronze statues of Charles I. and his consort Henrietta Maria, by Herbert Leseur. The figures on the west side represent "True Religion" and on the east "Sound Judgment."

The library comprises two very fine rooms and contains a valuable collection of books and MSS. as well as many objects of interest, among them Laud's pastoral staff, mitre, cap worn by him when beheaded, walking-stick that supported him to the scaffold and other relics, portrait of Laud by Vandyke, curious portrait of Charles I., the whole of the Psalms being written in the lines of the face and hair; and Caxton's Chaucer, the only perfect copy in existence. King Charles and his queen were sumptuously entertained in the library on August 30, 1636, upon the occasion of the opening of the new portion, Laud at that time being chancellor of the University.

The gardens were first laid out in 1612 in the old formal Dutch style, but in 1750 this gave way to the present arrangement, and they are perhaps the most beautiful of the college gardens in Oxford.

The new buildings on the north of the college were added in 1880-81 from designs by Mr. Gilbert Scott.

Wadham College.

Wadham College was founded by Nicholas Wadham, who conveyed a sum of money for the purpose before his death in 1609. Dorothy, his widow, carried out his designs, and purchased from the city authorities the site of the old monastery of Austin Friars. The consecration of the college took place in 1610, the royal license being granted in 1611, and the college opened April 20, 1613.

Of the old Augustine friary no certain trace remains, though the huge timbers in the roof of the outbuildings at the back of the King's Arms adjoining appear as if they might be of that early date.

The college is an exceedingly good specimen of early seventeenth-century Gothic, and remains nearly as it was at the date of its foundation. In the front quadrangle, facing the entrance, are the chapel and hall, dating from 1613.

The chapel, comprising a choir and ante-chapel, is interesting from its fine proportions and the simple purity of its Gothic design. The great east window, given by Sir John Strangeways, is considered one of the best examples of the work of Van Linge, the elder. It represents scenes from the life of Our Saviour, with the ante-types from the Old Testament, and was painted in 1621. The windows on the south side represent Christ and His Apostles, and on the north the Prophets. The marble floor was laid in 1677, and the brass lectern given in 1691. The chapel was restored in 1832-34 by Mr. Blore, when the present roof was put up, the design supposed to have been taken from a portion of Crosby Hall. At the same time the carved chancel rail was placed in position, and the stalls and screen were restored. The carved communion table was placed in the chapel in 1889; it is of the time of Elizabeth, and came from Ilminster Church, Somerset, where the founder and his wife used to worship. The new organ gallery is by Mr. T. G. Jackson, R.A. In the ante-chapel is a fine monument to Sir John Portman (1624). The windows are by Mr. David Evans, of Shrewsbury (1853), from designs by Mr. John Bridges, of Oxford.

Over the steps leading to the hall are statues of James I. and the founders. The hall is one of the finest in the University. The carved oak screen and open-timbered roof, with its louvre, are excellent examples of early seventeenth-century work. It contains several interesting portraits, including the founders, James I. (by Paul Van Somers), William III., George I., Dr. Wright, the first warden, afterwards Bishop of Lichfield and Coventry; Admiral Blake, Sir Christopher Wren, Speaker Onslow, Geo. E. Thorley, M.A. (the present warden), by J. Collier and others. There is also a fine bust of Lord Westbury and two handsome chandeliers from Westminster Hall, presented in 1824 by Dr. Tournay (warden 1806-31).

The library, of more recent date, was built over the kitchen to correspond with the chapel. It contains among other works of interest Warner's extensive collection of early editions of Shakespeare, including four folio editions, a fine copy of the Aldine edition of Petrarch, Lloyd's Geographical Dictionary, 1670, and some well executed tenth-century MSS. of the Evangelists.

The gardens were laid out by Dr. Wills, warden 1783. They are very picturesque, and contain some magnificent trees; the view of the college buildings from the garden is well worth seeing.

Nicholas Wadham and his wife Dorothy, daughter of Sir William Petrie, Secretary of State, came from Somersetshire, and for a long time Wadham men were nearly all west-countrymen, among them Admiral Blake, who graduated in 1617. John Wilkins, brother-in-law to Cromwell, was warden 1648-59. He was one of the founders of the Royal Society, and in his rooms over the entrance gateway the early meetings of the Society were held. Lord Westbury, Wadham's only Lord Chancellor, was a scholar, and dated all his successes in life from the time he became a member of the college. During this century Dr. Church (Dean of St. Paul's), Father Maconochie, the present Bishops of Wakefield and Calcutta, and Mr. T. G. Jackson, R.A. (architect), have been among its alumni.

Brasenose College.

Brasenose College was founded by William Smythe, of Prescot, Lancashire, Bishop of Lichfield and of Lincoln, and Chancellor of the University, conjointly with Sir Richard Sutton, Kt., of Prestbury, Cheshire, Privy Councillor and Governor of the Inner Temple. The foundation-stone (which may still be seen over the doorway leading to the common-room) was laid on June 1, 1509, and the charter granted by Henry VIII. in 1512. It was built on the site of four ancient halls, viz. Little University Hall, said to have been founded by Alfred; Brasenose Hall, Salisbury Hall and Little St. Edmund's Hall. Dr. Mathew, the first principal of the college, was last head of the hall, from which it takes its name. It is entitled in the charter "The King's Hall and College of Brasenose." The origin of the name is disputed; some authorities say that Brasenose Hall occupied the site of an old brasen-hus or brewhouse, while others believe it to have been derived from a massive nose of brass with a ring of iron, forming a knocker, that originally appertained to the hall, but was removed to Stamford by students who migrated thither in 1334, where it remained until 1890, when it was purchased and brought back to the college, and now occupies a place of honour in the college hall. The Tower Gateway, one of the finest in Oxford, dates from 1512. It was carefully restored by Mr. J. C. Buckler in 1865, the canopied niches being filled with figures of the Virgin and Child and SS. Chad and Hugh, patron saints of the founder's two Sees of Lichfield and Lincoln. The buildings in the great quadrangle, the hall and the kitchen, are also of the date of the foundation, the third storey of the quadrangle with dormer windows having been added during the reign of James I.

The hall on the south side is entered from a low porch, above which are sixteenth-century heads of Alfred the Great and John Erigena, who is supposed to have been tutor to Alfred. It is oak-panelled, has a good arched roof, and contains portraits of King Alfred, the founder, Nowell, Dean of St. Paul's, Mrs. Joyce Frankland, a benefactress, with her watch in hand (she resided at Rye House, Herts, and is said to have been the first lady in England who wore a watch), Sara, Duchess of Somerset, Dr. Burton, Dr. Craddock, late principal, by F. Holl and others. The hall was until 1760 warmed by a fire on a central hearth, with lantern or louvre above, but this was removed when the Hon. Assheton Curzon, D.C.L, gave the present handsome chimney-piece.

The chapel, 1655-66, is reputed to have been designed by Sir Christopher Wren, and if so, is worthy of note as having been one of his earliest works. The roof, said to have been transferred from St. Mary's, now Frew Hall, is very rich in fan tracery work, elaborately decorated with colours and gold in 1860. The windows are Gothic, the other work being chiefly Classical. The glass in the east window is by Hardman, 1855, the west window being by Pearson after designs by Mortimer in 1776. The candlesticks on the communion table are silver gilt, dated 1677, and the brass eagle 1731. In the chapel is a painting of "The Entombment of Christ," attributed to Spagnoletti.

The library, also by Sir Christopher Wren, is again a blending of Gothic and Classic styles. It occupies the site of Salisbury Hall, and was completed in 1663. Mr. James Wyatt restored it in 1780. It contains many bibliographical treasures, and busts of Lord Grenville, by Nollekens, and Dr. Kaye, Bishop of Lincoln, by Chantrey.

The west side of the new quadrangle was erected in 1883, and the buildings facing High Street in 1889, from designs by Mr. T. G. Jackson, R.A.

Among Brasenose celebrities may be enumerated Elias Ashmole (founder of the Ashmolean Museum), John Foxe ("Book of Martyrs"), Robert Burton ("Anatomy of Melancholy"), Bishop Reginald Heber ("From Greenland's Icy Mountains"), afterwards Fellow of All Souls; Deans Milman and Champneys, R. H. Barham ("Ingoldsby Legends"), the Rev. G. N. Wright ("London Encyclopedia"), &c.

THE RELATION OF SCULPTURE TO ARCHITECTURE.*

In most of our attempts to relate sculpture to architecture we find the connection between sculptor and architect a cold and formal, if not positively a distrustful one. I fancy some practical person asking how we are to bring about this ideal relationship. It is coming about in the most natural way, by gatherings like this one, planned with such care and pains by the disinterested minds of these thoughtful architects; it is coming about also as we understand better the province of architect and sculptor, and more than all else by the splendid system of art instruction in our public schools and the decoration of the schoolroom with photographs of the great buildings of the world, where the child may see and learn, unconsciously, how beautiful a building is made by the addition of happily placed sculpture; it is coming about, strange as it may seem, by a larger knowledge and appreciation of nature and natural forms, made possible by such men as Hamilton Gibson and George Inness, who died all too soon. We cannot be too thankful for such men as Gibson, Hunt and Richardson, who have brought art from the chilly regions of Olympus to the warm cheerfulness of our hearthstones.

How strange is the transformation wrought by art. Give a man a small Tanagra figure or a relief by Donatello, and his room looks not large or fine enough to hold it, and he begins to think of a more beautiful home, better ordered and more fit to contain his treasure. So he builds over again his Parthenon better fit to hold and enshrine his Minerva. As this is true of the individual, so it is true of a city or a nation. When a patron buys a noble painting or statue and brings it to his native town preparations are at once made to build a suitable temple to contain it. When a great man dies we honour his memory with a mausoleum or statue. The signs of the times are hopeful. Never in the history of the world did men give to art and education as they give to-day. You may remind me of Greece, but we learn the rich men of Athens were compelled to give, or we might never have seen the delicate and beautiful choragic monument to Lysicrates.

Now for the kind of sculpture we are to create; what must it be to harmonise with the architecture of to-day? Let me say at once that unless the sculpture, the wall-spaces and niches, or pedestals, are in the architect's mind when he conceives and makes his original plans and sketches, it will be very difficult to find appropriate settings afterwards, and the sculpture must appear as a new patch on an old garment, or vice versa. Hence the necessity of our architects studying something of sculpture and the great monumental works, that sculpture may find a natural setting and place in the first concept or plan.

Architecture without sculpture is like a library or life that is all prose. Sculpture adds the necessary poetic element or note, without which no building can endure as a work of fine art. No weight or mass or engineering skill and daring will atone for this lack. Sculpture must then, first of all, be structural—an integral part of the whole, and so related to it that it cannot be omitted. Having decided upon or conceived the relation of the poetic note of sculpture to the severe prose of the architecture, we must now decide what kind of sculpture will best express and embody our ideas.

We must now consider sculpture from the expressional standpoint. If the building is a national one we can readily appreciate that the sculpture must have a national character, such, for instance—to name a memorial in which we are at present interested—as the Dewey Arch. Here any local hero with a sectional interest would be out of place; we must have our great naval heroes, and the reliefs and the groups must be of supreme importance. Mistakes are often made (absurd as it may seem) at this very juncture, owing to a lack of culture and the influence of the money-seeking politician.

Having, then, found subjects and themes adequate to express completely (for he who runs must read) the idea to be conveyed, we must consider the colour element introduced by the material used, be it bronze or stone. Let us then denominate the third consideration, tonal. This consideration is worthy of our most careful thought, for a dark relief on a light background acts like a spot or cavity, weakening the effect of the mass and destroying the balance and harmony of the whole. If one could give a law or rule it would be safe to say dark colours should always be used underneath and light colours above; a dark bronze statue on a light pedestal can never look well, and we may look to nature for the reason, who invariably uses her dark tones close to the ground, grading her colour until she reaches the white clouds and sky. A dark relief should never be placed on the face of a pedestal, for the same reason as above. The dark effects can be produced by polishing often if the stone is too light, as, for instance, in Quincy granite. If an arch or memorial is to be of marble, the bronze should have a green or golden tone; but better still is it to carve the relief or group from the marble itself.

We have considered sculpture from the structural, the expressional and the tonal standpoint, as well as from the architect's plan or conception. Let us now look at the sculptor's point of departure, though only for a moment, for I am mindful that this is a Congress of Architects, and that sculptors are in woeful minority. The first question that the sculptor should consider is his background or pedestal, or both, and the space he has to fill; after that, the wall-space about his statue—the foil or background which is to set forth and tell his plastic story. Especially the height and perspective must be considered, and this is the hour when sculptor and architect should be closeted together, and work out the problem or plan. How many a good statue is ruined by a tasteless or incongruous pedestal. A building may be belittled by a statue that is out of scale and studied merely in the flattering light of a studio. Let me here say a word about the study of architectural sculpture out of doors, and the advantage (which cannot be over-estimated in making preparatory models of staffs, such as the Dewey Arch) of all memorial work to be placed in the open.

Let me speak here of a dangerous element creeping into our memorial works; I refer to the tendency to isolate a relief by placing it, as in the Shaw memorial at Boston, in a stone frame or setting where one may walk about it. There are traditions in art which must be respected, and we cannot be satisfied with the façades of men and women, for so relief work appears when we walk about it and feel its thinness. A relief is a part of the whole—an illustration, as much to-day as it was in Egypt or Greece, of the noble deeds of some hero or heroine.

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* A paper by Mr. W. Ordway Partridge, sculptor, read at the Convention of the American Institute of Architects.

So much for the practical relation of sculpture to architecture. Now for the ideal relationship, for sculpture will survive in our architecture in such measure only as poetry survives in our lives and hearts, and so far as the conditions of life produce heroes and poets. That is, we must consider the order of men who produce great art. What is great art? Let Ruskin answer you. "Good art," he says, "always consists of two things: first, the observance of facts; secondly, the manifesting of human design and authority in the way that fact is told. Great and good art must unite the two; it cannot exist for a moment but in their unity. It consists of the two as essentially as water consists of oxygen and hydrogen, or marble of lime and carbonic acid." And this idea of great art implies, of course, the thing he writes somewhere else, viz. "That art is valuable only as it expresses the personality, activity and living perception of a great human soul." And one must feel that this order of art which scorns mere imitation and interprets nature inspires and uplifts mankind. We are now fairly launched upon the larger and more ideal consideration of this precious relationship that sculpture bears to architecture.

I wish there were time to dwell upon the respective provinces of the sculptor and the architect, and show in this way the vital relationship and interdependence of one art to the other. Their relation in the great art epoch may be pointed out; for instance, how in the Gothic these two arts are so wedded that it is difficult to tell where one leaves off and the other begins; and, after the Gothic, in the period of the Renaissance, how sculpture became a mere result and less dependent upon architecture. It is not difficult to establish the fact that sculpture has always been related in some way to architecture. Even familiar sculpture in the household should be considered in relation to the architecture and decoration of the room. It may be the white note in the scheme of colour or a lustrous note of bronze, effective if used properly. A hint might be given how a picturesque element introduced into sculpture often confuses our appreciation of pure form and thereby interferes seriously with the proper understanding of the relation of sculpture to architecture. Let me go back of all this and show the relation of sculpture to the time. With us, curiously enough, it has outstripped the art of architecture, of which it is really the handmaiden. Let us discuss sculpture and architecture in their more comprehensive relation to life, and at this part of my paper I hope to make some vital suggestions; for without a knowledge of the present crisis, its problems and their great import, no man can build successfully or carve any statue of enduring worth. We come now to the order of the life in the past which produced great art, and which shows that, while we are dependent upon the great schools for our place in the history of art, there are certain laws which we must not violate, and which, alas! are violated every day in this country. I will show that we must understand and interpret this epoch, which has no precedent in history, because the conditions of life have never been such as those which confront us to-day.

I shall attempt to show that we must think and live well before we can build or carve art products that will outlast ourselves. I shall dwell upon the importance of exclusion and upon the value of repetition of a sculpturesque note in the architectural plan. I shall attempt to show how much of our sculpture of to-day is out of tune with the architecture, and positively harmful to it. A stand must be made for style, and what it means in fine art. Having shown the relation of sculpture and architecture, I hope to show how in modern times architecture has become a foil to sculpture.

One sometimes wonders if the sculptors and architects of to-day follow their calling for the glory of it, or for the more material desire to make gain thereby. When we consider the history of the Renaissance, which Leighton well says ends with Dante and begins with Petrarch, we hear first of the humanised art, when science began to walk hand in hand with nature, and men began to study the classic spirit. These men were great, first of all, as men, for they were men and truly lived, and did not dally in the mere show of things—forms and dress suits, and dinners and clubs, and everything ruinous to that nobler life which is lived in peace and contemplation. There is a grave danger which threatens our art, and that is what Leighton calls "the arts of luxury, more deadly than the arts of war," which, if I may be pardoned for saying it, killed him. You see it in the tendency to overload buildings with decorative sculpture, or mere decorative carving which has no especial meaning, and rather shows a desire to take the place of substantial construction, as a piece of bright or gaudy wall-paper will cover a defect in the wall.

We think of Babylon as the centre of that vast and rich empire in that most fertile portion of the globe, a capital that eclipsed all others in brilliancy, with hanging gardens that were the wonder of the world, and which fell into oblivion so absolute that she did not even produce one artist or one architect to record and perpetuate her magnificent mechanics. Over it, as some poet writes, has fallen the silence of the desert and the glamour of eternal night. And this brings the thought particularly home to us that our art is not sufficiently inevitable; that is, we have not the great order of living which begets a great art as naturally as the bud flowers into the rose.

When Greece, after the age of Pericles, began to think more of result than the desire to produce men, she not only lost her power to produce great men, but especially to appreciate the wonderful results that had been attained by them. Therefore it behoves us to remember always that life is greater than art. It was Thermopylæ that made Phidias, and it is that order of independent living, the doing of one's whole duty with naïve simplicity, that must produce an art which shall make us the rivals of Greece and Florence. The conditions of modern life seem to drive one into an order of living which keeps us always at hack work; we may, however, by uncompromising effort change existing conditions and raise life to that ideal plane which alone makes it worth the living. As soon as we begin to compromise with life we compromise with art. Is it not well, then, to consider these great ideas that underlie all great art? The artist is apt to condemn his people and his public because they will not take his art products, when he himself is at fault. We must not only cherish high ideals in the studio and the study, but we must stand by these ideals in the street and at the club.

We may learn something from Meissonier in this regard, that master of technique, who said that the utmost skill in technique does not make an artist; the artist is great or commonplace as his ideals are great or commonplace, and as a man's days so shall his strength be. One may talk for ever about the proper relationship of life to art. Meissonier declares that it lies not on the boundless field of speculative thought, but that it dwells within the heart, and thence it must be drawn. These few words sum up all art. If we have no faith, we must give up all idea of producing great art and undertake some simple business which we may realise and accomplish. If we do not live simply enough to believe that we can add something to the glory of the natural world, there is scarcely any reason for architecture, and none whatever for sculpture. If the natural world furnishes types enough at hand of special beauty and ideality, there would be no *raison d'être* for sculpture, and we could not accept Bacon's definition that "art is man added to nature." Those who study this age with sincerity soon learn that there is an anxious desire to get at the truth of things, to know the character and count of a man, and his relations to all men. This is one of the new problems we have to deal with in the world's history, for at no time has man had so much interest and so much sympathy for his fellow-men. The feudal system, a trace of which is still extant in Europe, has almost no meaning for us. Now this humanitarian idea introduced an entirely new note in art, and one that must show with great effect upon our architecture and sculpture. We may call it perhaps a note of sympathy—a larger understanding of man's relation to his fellow; a realisation that every one, poor or rich, has the right to enjoy this world's beauty, and to express as much of it as he feels in his own heart. This is an order of socialism in which we may indulge without fear; the reason for so much bad art to-day is not the lack of training, but the lack of education. Men are better trained than they were in the days of Rembrandt and Velasquez. But we have not yet an idea of what sympathetic education means. As Tennyson truly remarked in his last illness, "Education, as we understand it, would have ruined John Bright." We dally too much in the shade of the academy, and too little in the light of the man who created the institution. As we walk around the great cities of London and New York we feel everywhere the desire on the part of the people for a higher order of living, and we ought to concern ourselves, as architects and sculptors, with the thought of embodying certain ideals in form which will respond to this human need—to express as best we can the unexpressed.

Look at the meaningless Gothic structures about our city, built by contractors who are thinking only of how many dollars they can make out of the work, and what poor material they can use and yet escape the law. They are designed often, too, by men who, after a year or two abroad, have forgotten to think along their own lines, or the lines of their people, and reproduce the exact external form of some structure without in any way understanding the reason which gave the original the right to exist. The fact is that the humanities are crying abroad to-day, and if we turn a deaf ear to them we can no more create a great art than a Roman sculptor could have done the work of Donatello.

There are, of course, theoretical conditions, scientific reasons, climatic considerations, which determine, to a certain degree, the order of architecture for this latitude and longitude.

A studio may be built of staff in the south of France, and last twenty years, whereas it would go to pieces here after exposure to one winter of storm and ice. Yet brick is as lasting with us as it was in Cuma 4,000 years ago, and we are now beginning to use it with the delicacy and refinement that Peruzzi used it in Central Italy. An element, then, of tenderness must be taken into account in modern art. It is an element the Anglo-Saxon is inclined to disregard or suppress. He must tone down his natural inclination to boorishness and brusqueness. In this we may learn from the Latins. I do not mean to say that we do not need the old world and the Latin. It is only that we should assimilate what we need, rejecting all else. We are apt to copy their vices and disregard their virtues. You will note this in the Anglo-Saxon in our own country. The Eastern man does not take proper cognisance of the great West, and the Western man, on that account, often is led to despise what seems to him the affectation and cold culture of his Atlantic brother. The late war has made us realise, perhaps, that we are a united people, with mutual dependence on each other. I may have dwelt too long upon this theme of life being greater than art, but it seems useless to create a fanciful structure upon an unstable ground. It may be well to consider for a moment the art of sculpture alone, independently of architecture, and then to return to their mutual interdependence.

After his long life it is interesting to note that Michel Angelo declared, at the end of it, that if he had another to live he would devote it to sculpture. Yet to him we owe the glories of St. Peter's; he gave himself to the architecture of his time. What a contribution! It is touching and particularly interesting when we consider this saying of the greatest spirit of the Renaissance, and remember that sculpture was the central art of Greece and its chief glory. It is scarcely necessary to show the seriousness with which it was considered in relation to any art movement of the times. Architecture without sculpture may have great dignity and impressiveness, but the impression will be that mainly made upon us by the great sights in physical nature, stupendous but unsatisfying. The spirit of man demands the production of these high types which, like beacon lights, lift the soul beyond the storm and strain of living. Therefore a beautiful face or a stately statue is potent, because there is a more direct and greater response to human need than in a vast cathedral. We pass into the latter occasionally and into the former always.

Nothing will ever satisfy man so much as the reproduction of the highest types of men. We see in such the realisation of ideals we may have failed to reach and still aspire to. It was this thought that made Heine pass Notre-Dame and drag himself through the courts of the Louvre to the feet of the Venus of Melos. This is not found so much in that order of sculpture where human passion and frailty is depicted as where the triumph over human failure and suffering is shown. The fervid, restless carving (we must not call it sculpture) of the decadent school is of absolutely no use to us, and will be relegated by posterity to certain oblivion. We are drifting constantly back to the thought that art is dependent upon a great and simple order of living. In the tendency to immortalise many of our national heroes we find architecture becoming the handmaiden to sculpture—that is, the pedestal and the setting for the statue become of supreme importance. But here the same harmony must be observed, or the one ruins the other. Now is the time in this country, if ever, to give this subject our most serious attention. Theoretically, we have not the conservative spirit of our ancestors on the Continent, who hesitated to pull down a poor structure or a bad monument because of some historical association. No nation ever had a greater opportunity; no nation ever had higher ideals to embody, and we may be sure that no nation ever gave birth in trials and tribulations to men who were more fitted and more ready to do noble work than this American people. It behoves us, then, to study this problem of the hour, and not to consider what the Greeks would do under the same circumstances, or what a Frenchman would do under circumstances akin to these, but what we are to do now under the present crisis; to make a definite problem of the situation and resolve it as becomes men, doing our best and waiting with patience upon the future.

Mr. Hamo Thornycroft, R.A., has arranged with the Mansion House committee for the production of the colossal statue of King Alfred the Great, and the work will be completed by Midsummer next. The full-sized model in clay has already been finished. The statue itself measures 14 feet from the crown to the feet. The figure of the king is represented standing with one arm resting on his shield, the other held aloft, the hand grasping his sword so that the cross hilt is held uppermost. The pedestal, of rough-hewn granite, in a single block, will be over 20 feet high and will weigh close on 40 tons. About 4,448*l.* has already been received or promised towards the memorial, and 2,000*l.* more is required.

KING'S COLLEGE ARCHITECTURAL CLASSES.

THE following prizes have been awarded to the students of the day classes directed by Professor Elsey Smith:—

Architectural History.—Gold medal and books, Harry Prince; silver medal and books, Gilbert Henry Lovegrove.

Architectural Studio.—Gold medal and books, N. Austin Leech; silver medal and books, Harry Prince; bronze medal, Gilbert Henry Lovegrove, John Parlett.

Building Construction.—First Year.—Silver medal and books, W. J. Marlow; bronze medal and books, C. C. Thompson. *Second Year.*—Silver medal and books, J. R. P. Rowley; bronze medal and books, R. W. Edwards. *Third Year.*—Silver medal and book, N. A. Leech; silver medal and book, G. H. Lovegrove.

Quantities.—Silver medal and books, G. H. Lovegrove.

Evening Classes.

Architectural History.—Silver medal and books, Harry Prince; bronze medal and books, Ralph C. Wills; books, G. H. Lovegrove.

Architectural Studio.—Bronze medal and books, F. A. Sprules

Building Construction.—Silver medal and books, F. Hartnoll; bronze medal and books, F. J. Jones; books, C. A. Colyer.

Sanitary Science.—Alderman Sir Faudell Phillips's medal, George Henry Spears.

Constructional Drawing-book Prizes.—F. J. Jones, C. H. Wheeler, A. Bradburn.

Quantities (Book Prizes).—A. Bradburn, J. D. Robertson, A. Miles.

TESSERÆ.

Perspective and Foreshortening.

AS perspective has been defined to be the art of foreshortening objects, foreshortening may be explained as linear perspective applied to the human figure, this being the principal case which admits of striking perspective effect in such subjects, because when, as for the most part happens, the limbs are beheld in their full, or nearly their full, extent, let the attitude be what it may, the outline is little affected by mere perspective; consequently, except in ceiling-pieces where the figures are supposed to be above the spectator and seen from below the plane on which they stand, foreshortening—at least any considerable degree of it—is rarely required in delineating the human figure; while on the other hand it occurs more or less in almost all those of animals, their forms being more compounded and their bodies placed horizontally. An example of foreshortening may therefore at any time be obtained by standing either in front of or behind a horse, when the hind or fore-legs, as the case may be, will be nearly concealed by those towards the eye, and the back of the animal or its length be no longer visible. In sculpture, unless it be in reliefs, the foreshortening of the limbs depends entirely upon the station chosen by the spectator himself, whereas in painting it depends upon that chosen by the painter for him.

Foundations of Amsterdam.

Amsterdam was originally a salt marsh, and in order to make a foundation for houses it was necessary to drive large piles of wood or rather masts through a layer of peat, which in some places is said to be 40 or 50 feet thick. The nature of the soil may differ somewhat in different parts. The following facts will show still better its character. In 1605 a well was dug in one of the hospitals of Amsterdam (Oude Mannen-en vrouwen Gasthuis) to the depth of 232 Dutch feet. After 7 feet of earth there were found 9 feet of peat, and then soft clay, sand, earth, clay rather hard, and earth, altogether making 51 feet of depth. Then came 10 feet of sand, in which stratum the piles of Amsterdam chiefly rest. At the depth of 70 feet there was found 1 foot of pieces of peat. Sand, through which they did not make their way, was found at the depth of 232 feet.

The Mezzotint Process.

Having traced or drawn with a pencil or other instrument his outline upon the paper (unless, indeed, as is sometimes the case, this should have been etched by the ordinary process previous to the mezzotint ground having been laid), the engraver proceeds to excise away the nap or ground, in conformity with the design, from all those parts which are not intended to be perfectly black in the impression. The instruments required for this purpose are scrapers and burnishers; with the former he scrapes away more and more of the ground in proportion to the brightness of the light, and the burnishers are used to produce perfect whiteness where it is required, as the high lights on the forehead or tip of the nose, or white linen in a portrait, &c. As the work proceeds it may be blackened with ink, applied with a printer's ball or otherwise, to ascertain the effect; after which the scraping may again be proceeded with, the artist taking care always to commence where the strongest lights are intended to appear. The great facility with which mezzotintos are executed, as compared with line-engravings, will be obvious, seeing that it is much easier to scrape or burnish away parts of a dark ground corresponding with any design sketched upon it, than it is to form shades upon a white ground by an infinite number of strokes, hatches or points made with the graver or etching-needle. Herein consists the leading difference between this and all other modes of engraving, for while the process in each of these is invariably from light to dark, in mezzotinto it is from dark to light; and even the very deepest shades are produced before the design is commenced. The characteristic or distinguishing excellence of mezzotinto engraving would seem to consist in the rich profundity of its shadows, the obscurity of which especially sympathises with fine effects of chiaroscuro. It is, therefore, properly employed upon subjects where the quantity of dark predominates, as in the works of Rembrandt, for example; and there can be little doubt that, had this process been known to that great master, he would have availed himself of it in multiplying his works. This opinion is sufficiently corroborated by the fact of his having sought and obtained the same effect, or nearly so, by leaving the burr on his etchings, which, retaining the printing-ink, through a limited number of impressions at least, produced a result so nearly corresponding with mezzotinto that many persons have been deceived by it, and led to attribute to Rembrandt van Rhyn the discovery of this more modern mode of procedure.

The Roman Toga.

The material of which the toga was made was woollen cloth, which differed in thickness and fineness according to circumstances and the seasons. Under the Empire persons of rank used to have their togas made of silk. The colour was usually white, probably the natural colour of the wool. Those who appeared before the people as candidates for a public office wore a particularly white and clean toga (candida), whence they derived their name of candidates (candidati). On festive occasions, too, it was considered a matter of importance that the toga should be perfectly white. On melancholy occasions the Romans wore the toga pulla, or "dark-coloured toga." Whether, however, the word pulla refers to a particular dye, or whether it only means a dirty and worn-out toga, which was also put on with less care than usual, as seems to follow from the adjectives sordida and squalida, which are often given to it, is not quite certain, though it is a well-known fact that the mourning colour among the Romans was a dark blue. Towards the end of the Republic and under the Empire the toga, especially that worn by the emperors, was of a purple colour, and was called trabea. This custom appears to have been introduced by Julius Cæsar. As early as the time of Augustus many Romans had left off wearing the toga and taken to a kind of cloak called lacerna. This induced the emperor, who was fond of restoring ancient customs, to enjoin the ædiles to see that no Roman should appear in the forum or circus without the toga. The toga during the Empire continued to be the honourable dress which was worn by persons of rank, as senators, judges, priests, and by clients when they saluted their patrons or received the sportula, and especially on all occasions where the emperor was present. The mode or fashion of wearing the toga appears to have been variously modified in the course of time, although the general character always remained the same. A great difference seems to have existed in the quantity of cloth used for it, as some statues present a richer drapery than others. Respecting its form and the manner of putting it on, nothing can be said with certainty, notwithstanding the description in Quinctilian and the many statues with togas still extant.

Nature and Painting.

Nature, as it presents itself to the eye, consists of form, colour, and light and shadow; exactly answerable to these the principal branches of painting consist likewise of drawing, colouring and chiaroscuro, and as the eye can take in at once but a certain portion of nature, the art has another branch to regulate the quantity and disposition of the parts of this portion, called composition. These four constitute the practical or physical elements of painting, and their immediate purpose is to produce illusion, deception or the true bodily effect of things on the organs of sight. And as by the phenomena of form, colour, and light and shade, nature makes us acquainted with all her superior and more interesting qualities, so the corresponding branches of painting, through the medium of invention and expression (the soul of the art), are made the vehicles of our conceptions of sublimity, beauty, grace, mind, passion and character. Invention and expression being purely intellectual branches justly bear in consequence a more elevated rank and degree of estimation, but it must never be forgotten that they cannot exist alone; perfection in them presupposes perfection in the humbler and more mechanic parts, which are the instruments, the language of the art. Without these a man is no painter, and however extraordinary, abundant, brilliant or refined his ideas they must die with him; at least, he can never manifest them to the world by painting.

Filipino Lippi.

Lippi may be regarded as the representative of the naturalist element in the school of Florence, as Fra Angelico was of the ideal. The latter, pure in life, humble and devout in spirit, was the greatest ornament of the lyrical and mystical school of Christian art, and expressed in his pictures the joys of Paradise, the fervour of devotion, the raptures of religious ecstasy more successfully than any other artist before or since his time. But in the mechanism of art he was deficient. His drawing is frequently stiff, lengthy and incorrect. He had no knowledge of landscape, and often failed in truth of detail, relief and chiaroscuro. In all these respects Lippi was his superior, though far inferior to him in purity of life and thought, and in the power of expressing these saintly virtues. He was a devout worshipper of nature, and, from her teaching, aided perhaps by some of the pictures of the school of the Van Eycks, which in his time had found their way to Florence, and which were distinguished for their highly-finished and brightly-coloured backgrounds, he began to introduce smiling and varied landscapes into his own compositions instead of the old architectural backgrounds which Masaccio used to place in his pictures. In fact, Lippi may be justly regarded as the earliest landscape-painter of the Florentine school, his charming works in the Badia being alone sufficient to vindicate his claim to this title. But, on the other hand, the type of his Madonnas and saints is somewhat gross and vulgar, presenting a striking contrast to the imposing severity which characterises works of the same kind at an earlier period. His licentious habits divested his mind of refinement and purity, and in point of ability to portray divine beauty and religious emotion sunk him far below his saintly predecessors, whose lives had been as holy as their works. His pencil was best suited to the representation of dramatic subjects, for he excelled in the expression of action, movement and all violent emotions with which his own excitable and energetic temperament led him to sympathise and which he consequently depicted with remarkable power and success.

GENERAL.

Mr. Val Prinsep, R.A., has been elected professor of painting at the Royal Academy.

Mr. Joseph Farquharson has been elected an associate of the Royal Academy. His reputation has been gained mainly by painting snow-scenes. His *Joyless Winter Day* in the Tate Gallery is a characteristic example of his style.

Mr. Henry Law, who died at Westminster Mansions on the 18th inst. in his seventy-sixth year, was of late years known as a consulting engineer for water supply and drainage works. As a pupil of Brunel he was engaged on the Thames Tunnel Works, and had several escapes from death. He was the author of various books.

A Stained-glass Window to commemorate the centenary of the raising of the Rifle Brigade has been placed in the north aisle of Winchester Cathedral.

The Gold Casket which the Corporation will present to the Shah of Persia during his Majesty's visit in London is of Persian character throughout. The four corners are recessed alcoves, containing figures and surmounted by delicate minarets. The figures represent London welcoming commerce, education and justice. On the obverse is an enamelled miniature of the Royal recipient, whose Imperial crown is set with precious stones, and in the centre is an escutcheon bearing the initial letter "S" set in diamonds, elegantly modelled scrolls appearing at either end.

Donations of 100*l.* each have been offered by the Archbishops of Canterbury and York, the Bishop of Bristol, Earl Stanhope, Lord Northbourne, and other Fellows of the Society of Antiquaries, to start a fund to purchase a part of the sites of the church of St. Pancras and St. Augustine Abbey, in Canterbury, with a view to preserving the ground in its present condition. The land was sold on Wednesday to their representative, Mr. Vigers, for 3,000*l.*

The Ruskin Exhibition was opened in the Institute at Coniston on Saturday, and will remain open for six weeks. The surplus proceeds will be devoted to enlarging the premises, with the object of affording accommodation for a Ruskin museum of a permanent character. Mr. W. G. Collingwood, in his introduction to the catalogue, says the exhibition is intended to afford those who knew Mr. Ruskin personally in Coniston and any who have read his books or taken an interest in his teaching some further glimpse of his life's record and at his studies in nature and art; for which purpose there is brought together a varied series at his drawings, portraits, books and manuscripts, &c.

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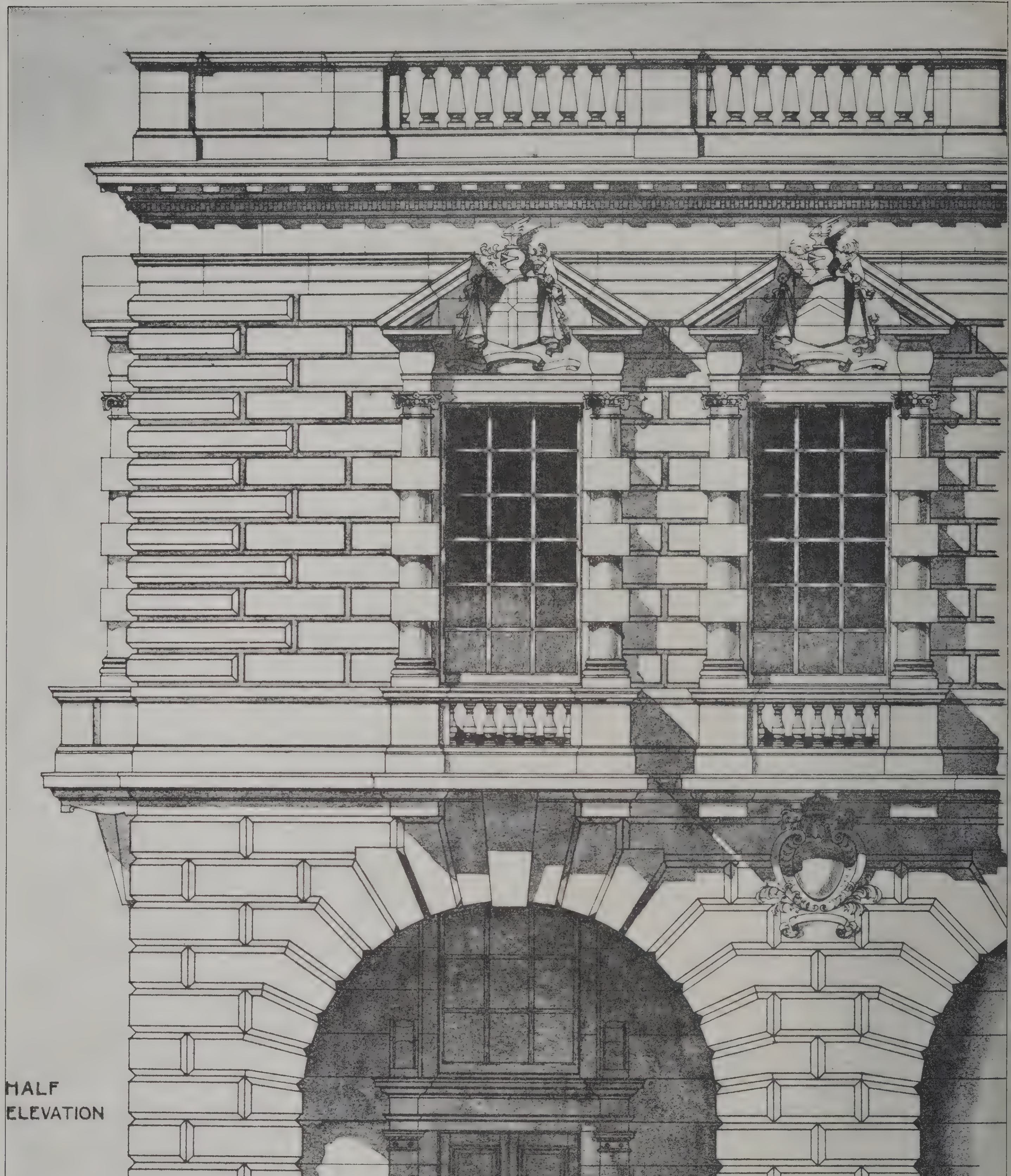

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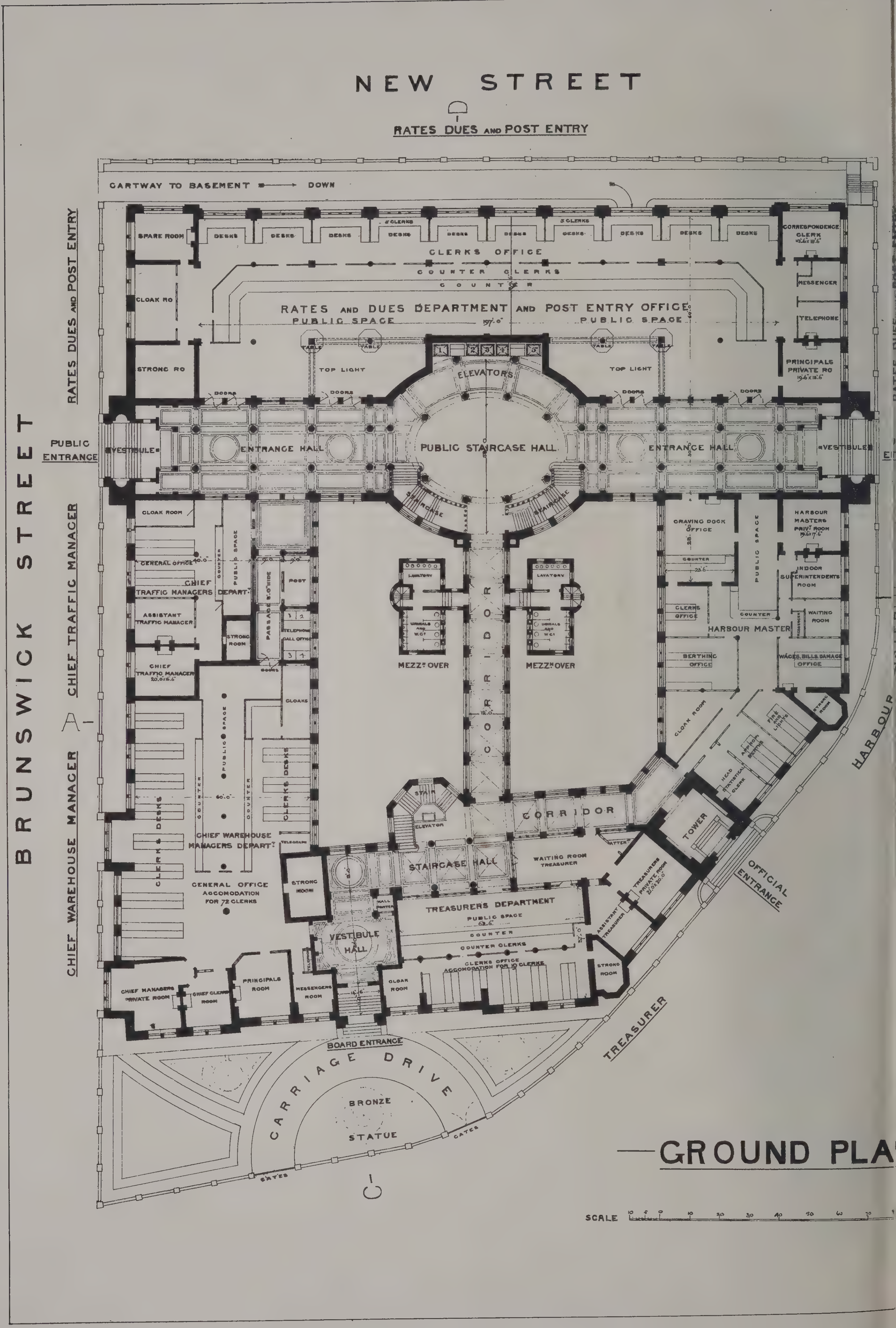

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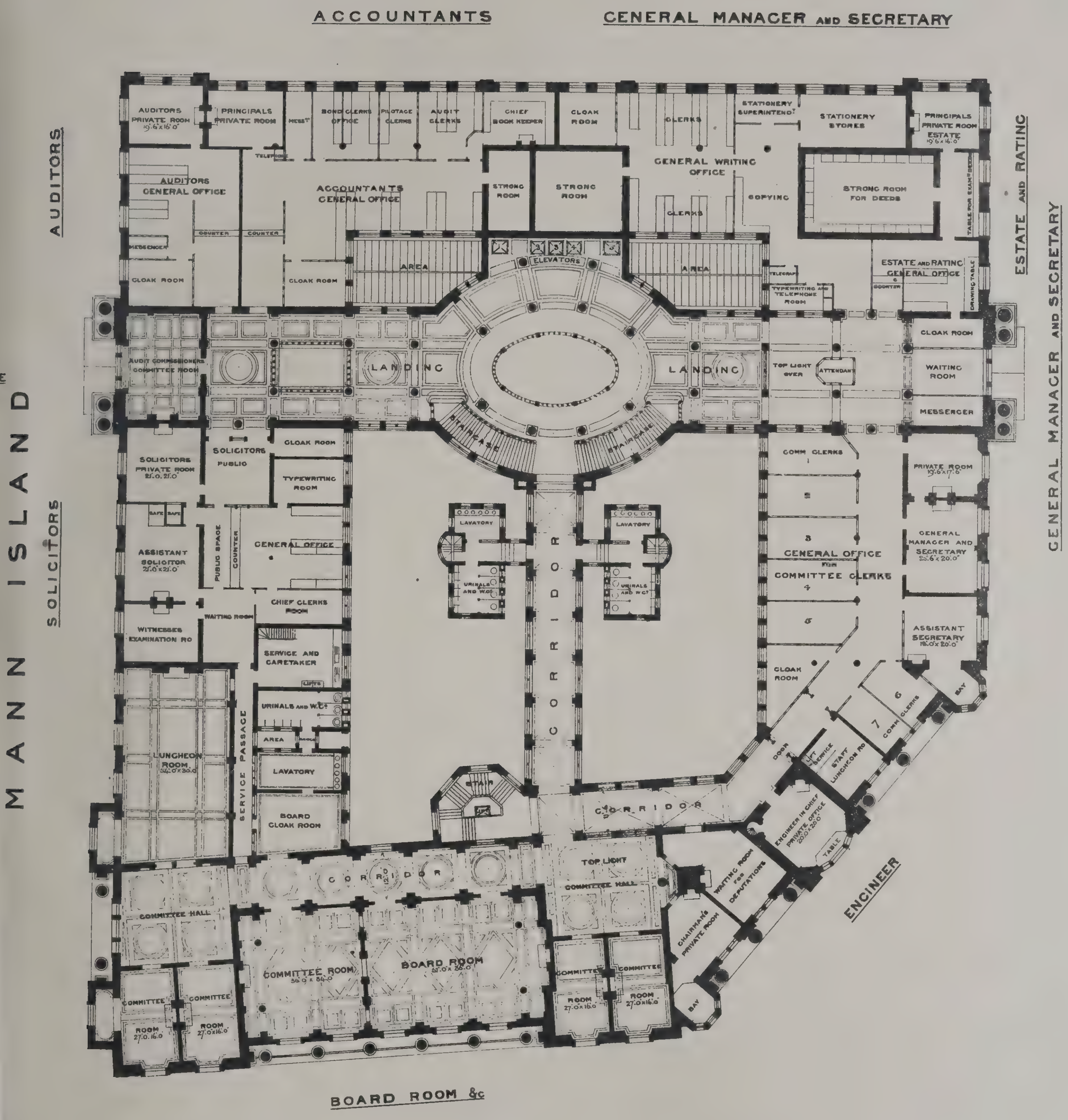

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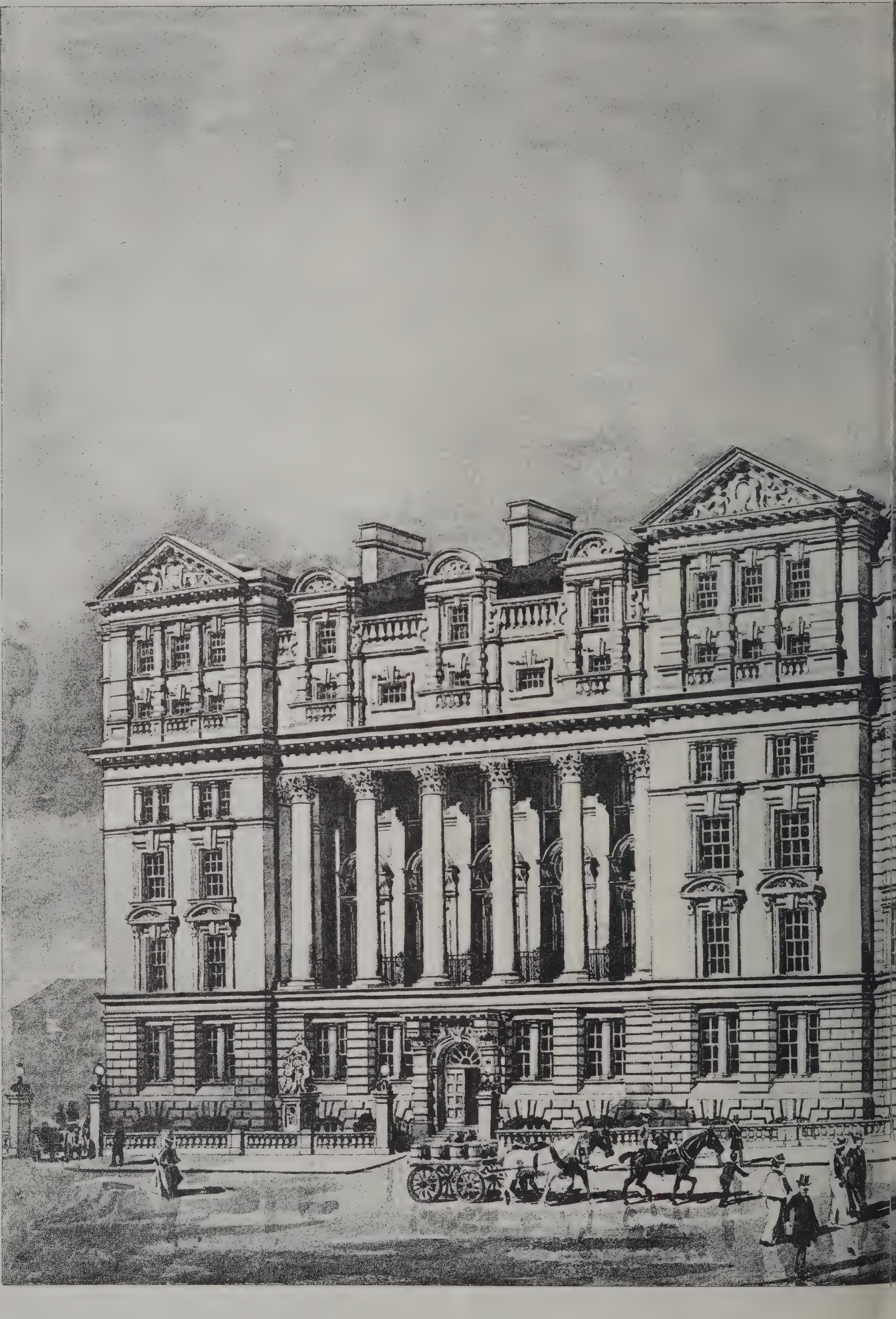

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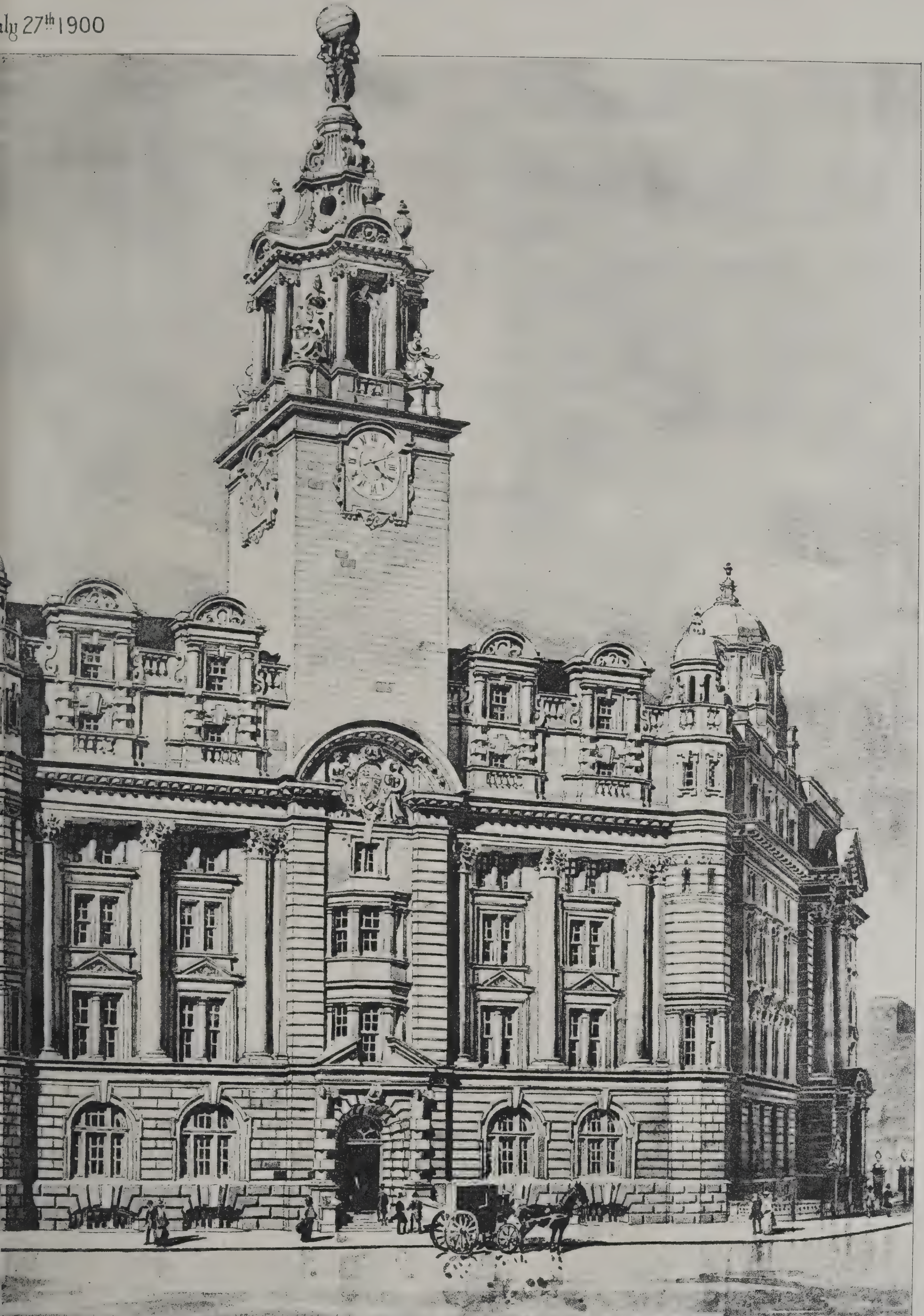

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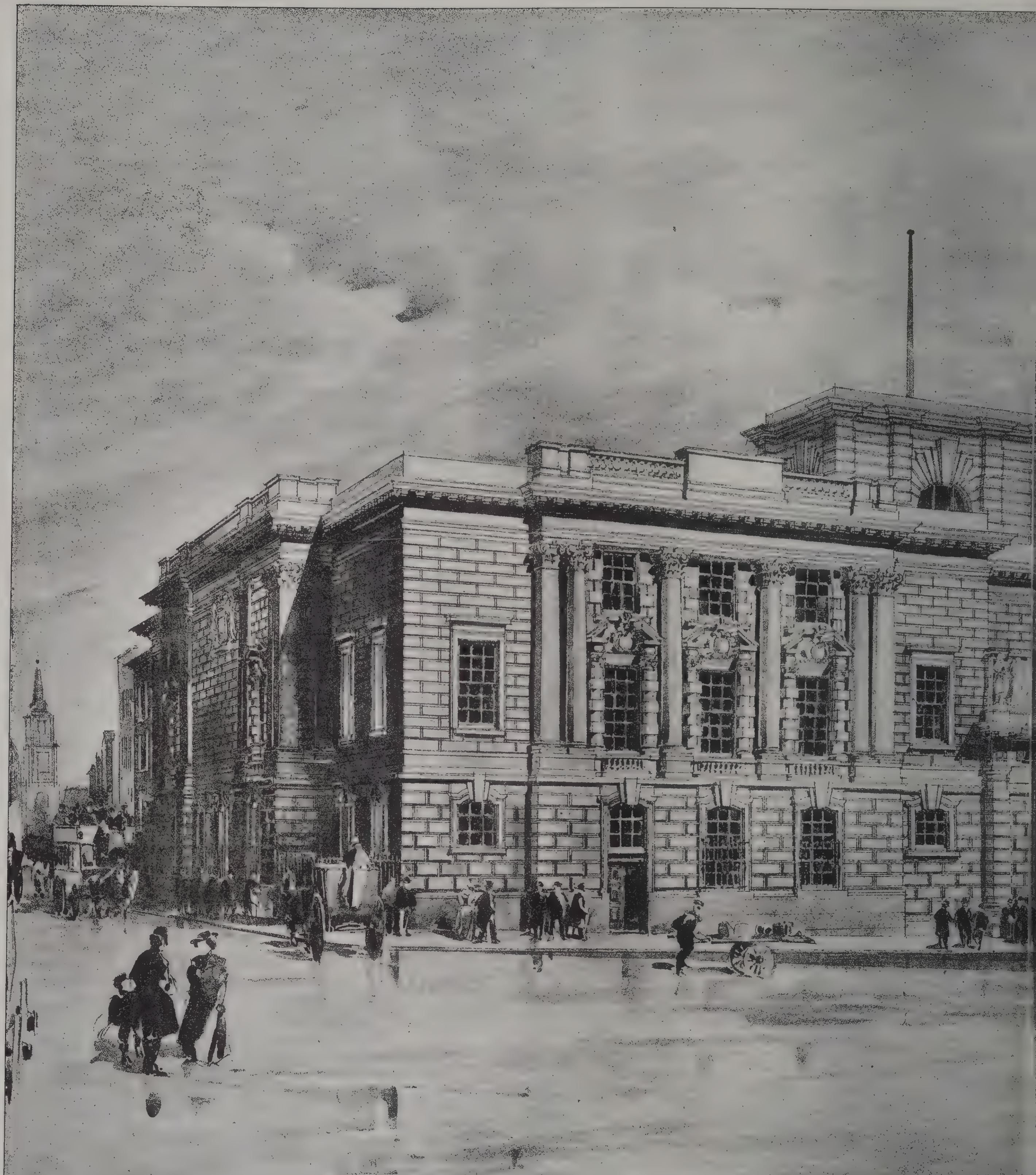

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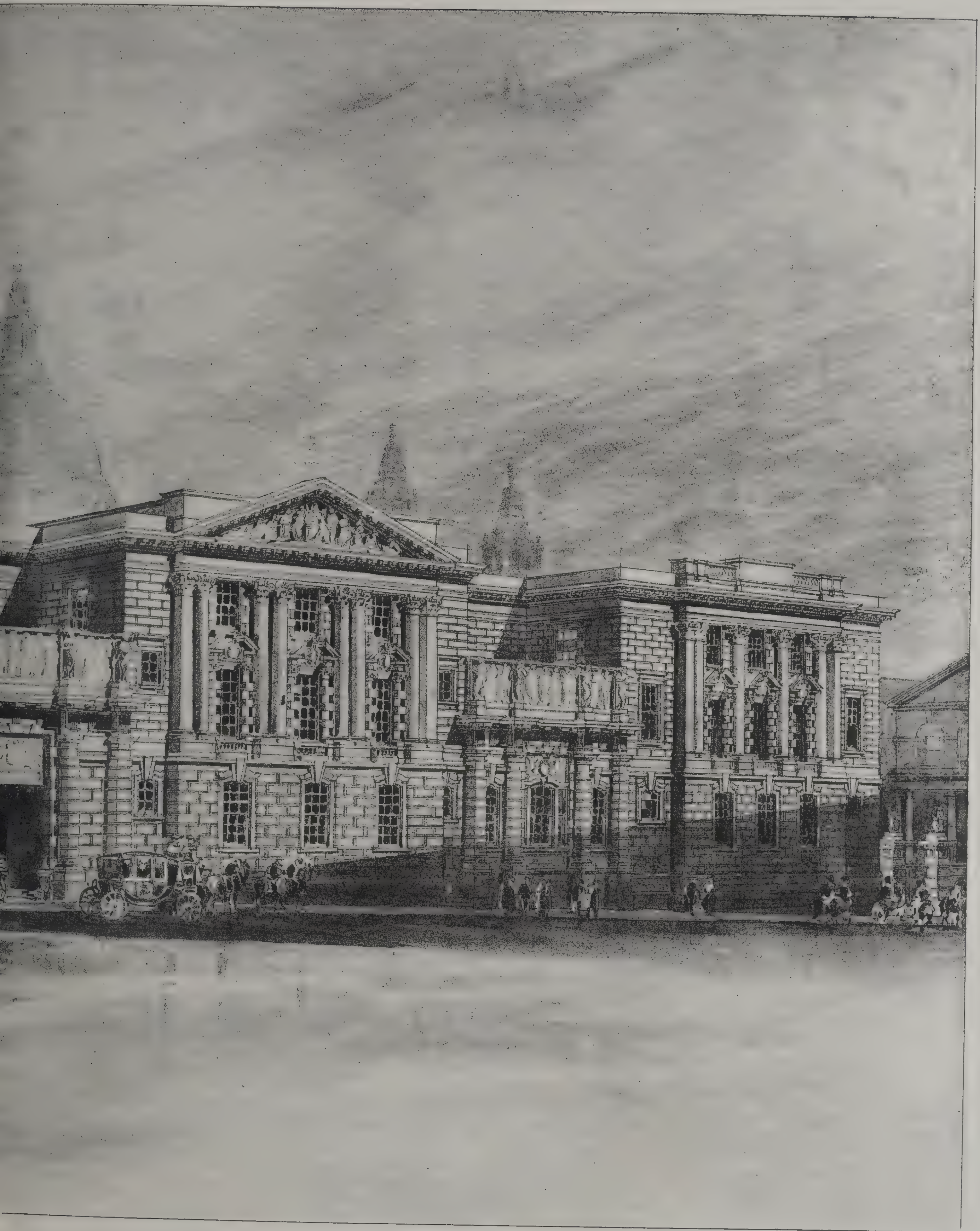
PERSPECT

By F. T. BAGAL



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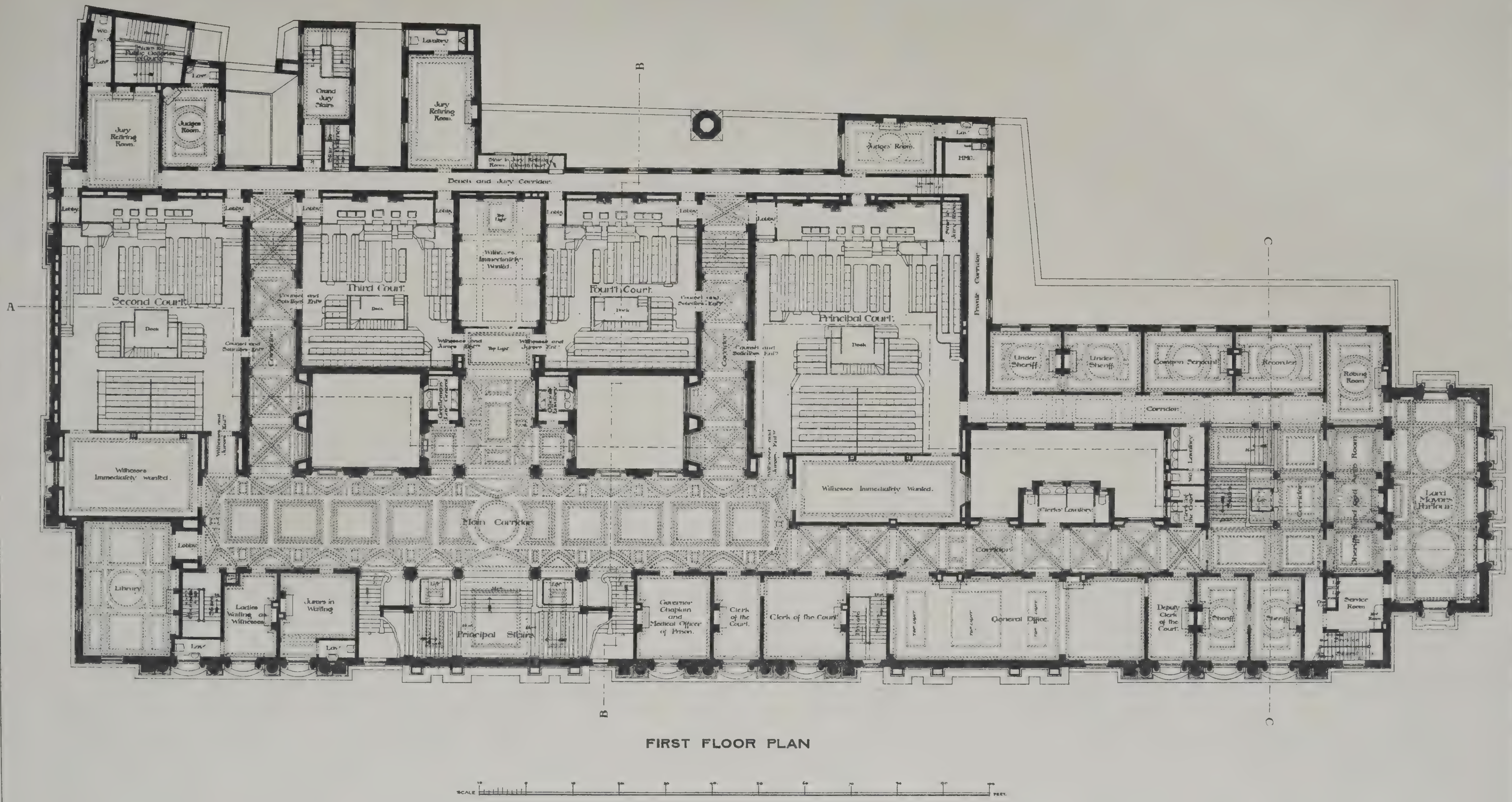

FIRST FLOOR PLAN

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DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY.

By F. T. BAGGALLAY, F.R.I.B.A.

The Architect.

THE WEEK.

It is anticipated that next year the rival exhibitions of the Société des Artistes Français and the Société National des Beaux-Arts will be held in the Grand Palais erected for the International Exhibition. The two presidents of the societies, MM. Jean-Paul Laurens and Carolus Duran, have agreed upon a partition of the building, and they have duly informed the Director of Fine Arts of the arrangements which they propose. Parisians may grumble if they are again compelled to pay two fees for seeing an exhibition which is held in a building that was erected at the cost of the nation, and they would prefer to have a revival of the old days before the secession, when for one franc the Salon was open to all. But art has gained through having two rival societies, and for a time at least there is a chance that individuality will be fostered. The Salon was declining, because all the power was vested in one or two cliques, and although they still exist they are less powerful, and are subject to more supervision by the ordinary members. The new society has had to demonstrate its right to a separate existence by the quality of the work produced, which could not fail to be beneficial.

The land at Canterbury which was sold by auction last week for 3,000*l.* was acquired on the guarantees of responsibility from a few individuals, and it is expected the public will subscribe in order that the purchase may be completed. When all formalities have been complied with it is proposed that the ground should be made over to trustees in order that excavations may be carried out, and afterwards to transfer it to St. Augustine's College. The interest arises from the circumstance that it includes the site of (*a*) the central tower, the north and south transepts and the whole of the eastern arm of the abbey church of St. Augustine, with its flanking apsidal chapels and St. Augustine's shrine, where he himself was buried; (*b*) the eastern range of the claustral buildings, including the chapter-house; (*c*) the monks' infirmary, and (*d*) the north portion of the ruins of the early Saxon church of St. Pancras, probably built by St. Augustine. The eastern portion of the abbey church covers the site of the church begun to be built by King Ethelbert for St. Augustine, and of the chapel of the Virgin Mary, built to the east of it by Ethelbert's son and successor, Cadbald. The excavations will no doubt confirm the belief about the uses to which the land was applied, and may enable a plan to be made which can be accepted as trustworthy.

A compilation of great utility to architects has been undertaken by the American Institute of Architects, to which we wish constant success. It is a quarterly bulletin, which will be an index to the publications of architectural societies and periodicals on architecture and allied subjects. The articles and illustrations in English, French, German, as well as American and Canadian journals are arranged in divisions, and a student who wishes to work up a subject can by the aid of the index obtain a clue to what is thought about it by the latest authorities. The divisions adopted at present may help to aid others who wish to classify articles and illustrations. They are as follows :—Abbeys, apartment houses, architecture, archæology, banks, biographical, brickwork, bridge, cement, churches, colonial, competition, concrete, construction, decoration, design, domes, dwellings, enamelling, electrical, ethics, exhibitions, fire, fonts, fountains, French school, furniture, glass, historical, hospitals, landscape, library, license, metal-work, monuments, mouldings, municipal buildings, niello, office building, palaces, pottery, porcelain, preservation of wood, residences, schools, sculpture, stations, street architecture, temples, tenements, tents, theatres, tesseræ and towers. It is characteristic of the American Institute of Architects to have the following announcement on an opening page :—"It is not proposed by the *Bulletin* to encroach upon the field occupied by any of the current architectural periodicals." No other architectural society could say so much. The peculiarity is creditable to American architects, and shows their independence of parties who desire to monopolise the attention of the public as if they were the only valid representatives of the art.

All who are able to understand the desire for change which is innate with Frenchmen will not be surprised when they read speculations about the fate of the Exhibition buildings when the show is closed. For a great many people all interest in the objects has vanished, and they would be quite content to see a rearrangement, or, in fact, any process which would make the contents of the buildings assume a different appearance. Some are condemning the architects because they did not impart a character to the palaces which would make them comparable to the greatest works of all ages. It was not remembered that the designers were aware of the short duration of their work, and it would be absurd to make structures which were to have such a brief existence resemble buildings which were intended to endure for centuries. There are, however, a few buildings which are not destined to vanish like the baseless fabric of a vision, and among them are the Great Palace and the Little Palace which are devoted to the fine arts. The former is destined to take the place of the Agricultural Hall, Islington, and the Royal Academy in exhibition time. It is to be used to display horses and carriages and probably motor-cars, as well as pictures, statues and other works of art. But the use that is to be made of the Petit Palais is not yet fixed, and as in 1851 in London people inquired, "What is to become of the Crystal Palace?" in Paris the question now is, "A qui le Petit Palais?" At present the building is occupied with an exhibition of retrospective art. It contains wonderful ivories, enamels, majolica, porcelain, pictures, sculpture, goldsmiths' work, &c. A great many of the objects are from churches, monasteries and similar buildings. A few would like to make the collection national property, and to keep the Petit Palais as it is. But law must be respected, and the property returned. What use will be made of the building? Many answers have been given to the question, but the majority favour the conversion of it into a museum which will bear some resemblance to the South Kensington. If the collections belonging to the Union of Decorative Arts which have been lying useless for many years could be made available, they might be placed with advantage in the Petit Palais, but it appears they are to be deposited in the Pavillon des Marsan of the Louvre. Nobody believes there will ever be a permanent resting place for the property of the Union des Arts Décoratifs, but for the present it has to be assumed a habitation has been formed for them. It has, therefore, been proposed to place some of the property of the State and of the Municipality in the Petit Palais, but to use the building mainly for loan exhibitions relating to industrial art. It is remarkable that, notwithstanding the number of museums which are to be found in Paris, there is not one devoted to those objets de Paris which are the delight of all visitors. An exhibition in which carefully selected examples of ancient and modern times appeared could not fail to be a success.

As the days become shorter artificial light will have to be more generally used in connection with the Paris Exhibition, and the risk of conflagrations will be accordingly increased. The Prefect of Police has, therefore, issued a decree which is to be observed in all palaces, galleries and buildings of whatever kind which are to be found within the limits assigned to the Exhibition. It is ordered that in the course of a week, which ends to-day, all awnings, decorations and hangings, as well as all exposed woodwork, must be rendered uninflammable by the application of a preparation which is capable of producing that effect. The duty of examining the process employed has been entrusted to the experts of the municipal laboratory. It will be necessary to have the stamp of the laboratory impressed on whatever can be considered as affected by the decree. Any neglect to obey the order will be brought under the notice of competent tribunals.

SUBURBAN DWELLINGS FOR THE POOR.

THE Housing of the Working Classes Act has been in operation since 1890, but it is receiving more attention now than at any time during the past ten years. Like all legislative efforts, it has been found to be not entirely suited to attain the end for which it was devised. In a great many places men consider the remedy is almost as troublesome as the disease. The clauses have been utilised to enrich a class of people who, speaking generally, have merited punishment rather than reward—in other words, the sharp owners of houses which are not suitable for habitations. The relations between landlord and occupier in the humblest class of dwellings in the large towns of the country are commonly far more satisfactory from a gold-seeker's point of view than those which prevail when a better class of houses have to be occupied. To men, and it must be said to many women also, who care only for profit, investments in slum property are found to yield a large percentage. But it is necessary to be merciless in exactions, and the task is therefore entrusted to representatives. Some of these landlords and landladies profess to believe they are rendering the State a service when they are most grasping in their usury. For they say if the money were not taken by them it would be misapplied, and therefore in the general interest, as in that of the tenants, the most praiseworthy course is to withdraw as far as possible the small sums which might lead the temporary possessors into temptation. Owners of that class know how to turn the Housing of the Working Classes Act to their profit. This process of enriching proprietors under Parliamentary sanction is not confined to England. Apparently it is no less approved in Scotland. In the last report of the burgh engineer of Edinburgh we find the following passage, which will suggest that the utilising of the Act of 1890 for sordid purposes is general :—

> In dealing with a slum area it is highly important for a community to keep in view that the powers conferred by the Housing of the Working Classes Act are not designed for the purpose of allowing house factors and owners of property to allow their houses to lapse into insanitary conditions in the hope that the local authority will by-and-by be compelled to come to the rescue, and buy up at eight, ten, or twelve years' purchase of an unjustly inflated rental, for the mere pleasure of clearing such property off the face of the earth. The beneficial intentions of the Act are in this way entirely defeated. The question in the case of really uninhabitable property is rather the value of the building materials and of the site on which it stands, less the cost of removal. This, and not more, should be the price paid for such houses. If rental is to be considered, a fair and just valuation ought to be fixed by taking into consideration the sanitary condition of the property, and due account of all rack-renting, after deducting the cost of putting the property into fairly habitable sanitary condition. In using ground available by the clearances of slum areas, a rate of 12*s.* to 15*s.* per square yard at thirty years' purchase, or 96*l.* 16*s.* to 121*l.* per acre, has been allowed. But when it is taken into account that 40*l.* per acre is the maximum permissible for this class of housing, the disadvantages and difficulties of erecting new housing for the poor on such areas on a paying basis become evident. Sites for rebuilding on these areas dealt with under the slum schemes cost on an average about 3*l.* per yard, or 14,520*l.* per acre. This is ten times the price which ought to be paid for such sites, apart altogether from the extra cost of erecting houses for the poor.

In England the difference between the real value of property and the price paid for it, in the hope of benefiting the working classes, is often still more disproportionate. Judging by the financial losses, it might be supposed the Act was intended to add to the burdens of ratepayers without affording any advantages which can be considered as equivalent. The incitements to be over-generous by those who acquire responsibility under the Act are often too strong to be resisted. There are few men in authority in councils and corporations who are indifferent to the reputation which arises from being considered friends of the working classes, promoters of public health, and all the civic virtues which accompany it. Such men wish to display their courage in clearing insanitary areas and of transforming them. If the expenses are high the more credit is assumed to belong to them for facing the difficulty, and there are more claims on the expression of gratitude in the form of votes. It should be remembered that the expenditure of a few extra thousands does not appear to add much to individual taxation, unless in the case of very small towns or districts. One area after another is acquired, improvements are accomplished, and then it is discovered when the different items are reckoned up that the indebtedness of the place has been increased to an extent which at first was not anticipated. When the conference of the Sanitary Institute on Monday, after a long discussion on the subject, came to the conclusion, "This conference is of opinion that the present method of dealing with insanitary areas is extravagant and unsatisfactory, and urges Parliament to provide some less expensive and more expeditious mode of procedure," no more was expressed than could be verified and endorsed by those who have to carry out the Housing of the Working Classes Act.

The initial difficulty at the present time when dealing with the housing of the working classes is the impossibility of obtaining possession of the most unhealthy area in a town at a reasonable rate. Mr. R. MELVILL BEACHCROFT, a member of the London County Council, who presided at the conference of the Sanitary Institute, claimed some credit because the Council's cost of 50*l.* per head of clearances effected was less than the 59*l.* per head which had to be paid in the time of the Metropolitan Board of Works. Both prices we consider to be too high. Mr. BLASHILL, the late superintending architect to the Council, described a scheme by which the greater part of the expenses would be cast upon the owners of the areas. In that way the cost per head of each person displaced would be diminished to 11*l.* 10*s.*, which is a sufficiently full price to fall on the ordinary ratepayer. But the local authorities are too well aware that so long as property-holders retain the power which they possess at present, and can sell free from competition tumble-down houses however unhealthy for sums far beyond their value, it is hopeless to attempt any conversion of slums into healthy districts. The tendency, therefore, at the present time, is to seek new areas at some distance from the costly nurseries of disease. A few instances of the prevailing desire to adopt this solution of the problem may be given. The burgh engineer of Edinburgh, in the report to which we have already referred, says :—

> Ground for sites for housing can only be obtained at a cheap enough rate by travelling a good way into the suburbs, or indeed outside the present boundary of the city, and even if ground can be obtained at a reasonable rate, say, as a maximum, 40*l.* per acre, many questions arise in connection therewith, such as, Should the Corporation be vested with compulsory powers to enable them to acquire such land? Why should not Part II. of the Housing of the Working Classes Act, 1890, be taken advantage of? Should cheap and handy travelling facilities be provided in order that the people travelling to and fro to their work and otherwise be fully accommodated? Will the labouring classes take advantage of such houses when erected? Short of this there does not appear a way out of the difficulty, excepting municipal aid, and most people will admit that it is fraught with mischief to attempt to pauperise. It is out of all reason to suppose that slum clearances are the remedy, or that the persons dishoused by such clearances can be rehoused on the same areas. The remedy for overcrowding, which is one of the main evils which are struck at by our slum clearances, involves the acquisition of new sites on which to erect new housing. For such new sites one naturally turns to unoccupied suburban areas, and the available existing enabling legal machinery is Part III. of the Housing of the Working Classes Act, 1890 To my mind the Corporation should, without loss of time, possess itself of sufficient suitable cheap lands for the purpose.

The Birmingham health committee have come to the conclusion that they dare not attempt to deal with some of the insanitary areas, for "that would be to carry out an unhousing scheme, and would lead to overcrowding in neighbouring areas, to increased rents, and generally would accentuate the evils which the committee are anxious to remove and be a hardship to the very class whom it is most desired to help." They accordingly recommend that a site containing about 17½ acres, near Bordesley Green, should be at once purchased. It is believed that about 500 small houses can be erected there, and consequently a population of 2,500 will be provided for. It is anticipated that other experiments of the same kind will quickly follow, and an effort was made to have the period for the repayment of loans extended to ninety-nine years. At present it is usually about fifty years for land and a shorter time for houses.

The proposal did not meet with the acceptance of the Local Government Board or of Parliament. The reason no doubt is that owing to the brief length of leasehold tenures the majority of houses erected are not calculated to endure for a much longer period than fifty years. There are plenty of houses in England that have endured for centuries, but the builders did not anticipate in those days that in the course of a few years their structures were to be compulsorily handed over to the owners of the sites without any compensation. They gave some thought to futurity when selecting and using materials, and succeeding in conquering time. The Southend Town Council are also considering a scheme for the purchase of five acres at a distance of a mile from the town, on which to erect sixty semi-detached houses which can be let cheaply, some at 6*s*. 3*d*. and others at 7*s*. 9*d*. a week, including rates and taxes. Whatever the rent, each will be provided with a bath. The non-official Liverpool housing committee have also recognised the impossibility of dealing with the difficulty in any other way than by emigration on a small scale, and have urged the City Council (1) to erect municipal cottages on available sites near the outskirts of the city, to be let at rents suited to the resources of working people; (2) to reduce tramway fares and give special facilities to working men going to and from work; (3) to vigorously enforce the provisions of the Public Health Acts and local Acts regarding insanitary property.

It has yet to be seen whether the working classes who have become habituated to residence in town would be satisfied with suburban quarters. The delights of home might not then appear to correspond with the vision which fancy had created. No doubt compensation could be found for the excitement of town, but there is no question the British workman is conservative and likes to live near the place where he is occupied. It would, therefore, be well to consider the erection of houses beyond the limits of towns as an experiment, and before launching into extensive operations like those proposed by the London County Council, to watch the effects on the first tenants and to be guided by experience. The working classes are not to be coerced even for their own advantage. Nobody can suppose that the houses are ever likely to be untenanted. To obtain a house with a good-sized living-room, parlour, three bedrooms, a bath and domestic offices at Southend for less than 20*l*. a year, including rates and taxes, would be enough to attract a great many employés from the City who would not usually be described as belonging to the working classes. Occupants of a corresponding species would be forthcoming elsewhere. That would, however, be a repetition of what has taken place in many of the model dwellings, which are occupied by tenants of a superior class to those for whom the buildings were erected. Indeed, in all the building schemes care should be taken to confine their purpose to meeting the social difficulty, which is now the most urgent. Overcrowding is not to be overcome by settling people who are able to take care of themselves in country houses which are erected under municipal auspices. In other words, the duty which now falls upon the authorities is to adopt means which will compel the owners of unhealthy houses to submit to a competition of prices; and secondly, to benefit tenants who, from being so long victims of merciless landlords, require to be convinced that society has some concern in their welfare.

SIR PETER LELY.

For about forty years Sir Peter Lely was the most prominent painter in England, and if we remember rightly there is only one of his portraits in the National Gallery. Very few visitors would care to have more examples by him. And yet no painter can be more closely identified with one period of English history. His Court beauties, who figure as saints, shepherdesses and goddesses, suggest the character of the Restoration with more exactitude than any history, unless we include the "Mémoires de Grammont" under that head. He was the man for the time, and his portraits suggest how remarkable was the change which had come over English manners.

The Dutchmen and the Germans can claim him. His family came from Holland; the family name was said to be Van der Faes, but as the painter's father entered the world unexpectedly in a perfumer's shop having a lily on its signboard at The Hague, he was nicknamed Dulys, or Lily. He was a captain of foot and was stationed at Soest, in Westphalia, when his son was born in 1619. The boy was called Peter, and he showed so much aptitude for art that he was sent to Haarlem to be taught by Pieter Fransz de Grebber. Frans Hals was then working in the town. At first Lely painted small pictures, such as landscapes and history pieces. He attracted the notice of the Prince of Orange, who had married the Princess Mary, daughter of Charles I., and who became the mother of William III. The prince brought the young artist with him to England in 1641. Vandyke was the Court painter at the time, but in that year he succumbed to those arts of luxury which have been said to be more deadly than the arts of war. There was an opening for a foreigner who was willing to flatter, and Lely shrewdly abandoned history and landscape for English portraiture. The patronage of Charles I. was not destined to be of long duration. The Civil War began in 1642. In 1647 the king was imprisoned in Hampton Court, and it is supposed that while there Lely painted the portrait in which Charles appears holding a letter, and the Duke of York is depicted as proffering a penknife to cut the bands which enclosed it.

When Cromwell succeeded to supreme power he realised the principle that art has no politics. Lely was not treated as if he were one of the ministers to the luxury of the tyrant. The Protector sat to him and, according to Captain Winde, said to the painter :—"Mr. Lely, I desire you would use all your skill to paint my picture truly like me, and not flatter me at all, but remark all these roughnesses, pimples, warts and everything as you see me, otherwise I never will pay a farthing for it." This was a characteristic declaration, and would seem to show that Cromwell was a thorough realist; but he was certainly of a different mind when he purchased Raphael's cartoons. The words also suggest that at the time Lely must have gained a reputation for imparting graces to the portraits which the subjects did not possess. Succeeding to Vandyke's position, he could not fail to realise that if he was to expect patronage he must imitate the Flemish master. The admiration in which he held Vandyke is shown by the number of examples by that artist which Lely acquired; he possessed over twenty portraits, besides religious pictures, and a sketch of the procession of the Knights of the Garter which Vandyke was to have painted at Whitehall. The interesting series of the portraits in grisaille of contemporary celebrities lately exhibited at the Royal Academy formed part of Lely's collection. Among the portraits were the following:—Vandyke's own picture in an oval, "The Family of Endymion Porter," "Another Family of Seven Figures," "The Earl of Strafford and Two Sisters," "Lady Thimbleby and Sister with a Cupid," "Mrs. Kirk," "Duchess of Richmond," "The Countess of Middlesex," "The Countess of Carlisle and a Child," "The Countess of Sunderland," "Tho. Killegrew with a Mastiff," "Sir Walter Pye," "The Lady Pye," "Mr. Taverner," "The Countess of Carnarvon," "The Countess of Newport," "Sir Arthur Hopkins," "Lady Hopton," "Lady Tufton," "Earl of Newport," "King Charles I.," "Marquis of Huntley." So large a collection of the works of one master is enough to demonstrate that Lely wished it to be known that there was some affinity between his own works and those of his predecessor as Court painter. It is remarkable that with the exception of the examples by Vandyke, portraiture was very sparingly displayed in his large collection. According to Walpole, Lely never reached Vandyke's standard, although he declared that Lely's women were more handsome, and excelled in the softness of the flesh. In portraits of men he gave the preference to Vandyke. It may be doubted, however, whether the people of those days cared to compare the works of the living and the dead.

Byron speaks of

> some beauties of Sir Peter Lely,
> Whose drapery hints we may admire them freely,

and the novelty of Lely's style consisted mainly in drapery which was of such a character as to leave every beauty free to sink or swell as accident pleased. It was a departure from the old habits of English women, and suggested manners which were foreign. But the fascination which the portraits exercised over the people is revealed by the declaration of PEPYS, that "one of Lady CASTLEMAINE was a most blessed picture;" a phrase which a devotee would hardly apply to an altar-piece. Having attained so much success, it is no wonder that LELY was, according to the same observer, "a mighty proud man and full of state." He had his town house in Drury Lane and a country house at Kew. He was, moreover, able to acquire one of the finest collections of paintings to be seen at that age. The auction of them occupied forty days, and the amount received was 26,000*l.* It contained the works of more than sixty artists, including PAUL VERONESE, TITIAN, PARIS BORDONE, BASSANO, GIORGIONE, PALMA, TINTORETTO, GUIDO, CLAUDE, BOTH, RUBENS, WOUVERMANS, FRANS HALS, ANTONIO MORO, FIAMINGO and BERNINI. The painting which brought the highest price was a *Holy Family* by PAUL VERONESE, for which Lord PETERBOROUGH paid 300*l.*

Although LELY'S name will always be associated with the ladies who were favourites in the Court of CHARLES II., he has painted portraits of men which are perhaps more satisfactory. WALPOLE considered his portrait of CHARLES I. as truly expressive of the storms which surrounded the king. His portrait of COWLEY, the poet, is described as having pastoral simplicity and beauty. He has also left portraits of BUTLER, the author of "Hudibras," and of OTWAY, who wrote "Venice Preserved," two unfortunate men of genius who were too poor to have paid the artist. It used to be said that LELY died because when ill his physician told him of the success of GODFREY KNELLER, but the truth seems to be that he was seized with an attack of apoplexy while making a drawing of the Duchess of SOMERSET in 1680. He was buried in St. Paul's, Covent Garden, and GRINLING GIBBONS carved his monument.

It has been stated that LELY alone excuses the gallantries of CHARLES II. and painted an apology for that Asiatic Court. As long therefore as the history of the reign continues to be written the name of Sir PETER LELY cannot be ignored; it is sure to have as much immortality as any of the fair sinners he represented. It is curious that an artist's fame should be dependent on the want of virtue in his subjects, for it would need stronger evidence than can be produced to make anybody believe that one of LELY'S women was honest. He is taken to be the painter of the courtly demi-monde, and his talents are supposed to have been only adapted to his office. There can be no doubt, however, that as a painter he possessed many merits. His colours appear to have been left unaffected by time, and their brightness is supposed to be in some way connected with the brazen and unblushing characters of the subjects. But it must be also allowed that BEECHEY was not far wrong when he said, "LELY was a painter of considerable talent, and many of his portraits very justly rank high in the art, but he was too decided a mannerist to attain superior excellence; and they who took his works for models were more likely to imitate his defects than to acquire a knowledge of his actual merits."

Although the portraits may appear to have been dashed off, there can be no question about the pains taken by LELY to attain his effects. We have evidence of his manner of working in the diary of CHARLES BEALE, who was an amateur painter and colour maker, and was the husband of one of LELY'S pupils. We give some of the entries relating to the portrait of TILLOTSON, one of the most famous of English churchmen, who was then Dean of Canterbury and afterwards Archbishop:—

24 April, 1672. My most worthy friend, Dr. Tillotson, sat to Mr. Lely for his picture for me, and another for Dr. Cradock. He drew them first in chalk rudely and afterwards in colours, and rubbed upon that a little colour, very thin in places for the shadow, and laid a touch of light upon the heightening of the forehead. He had done them both in an hour's time.

5 June. Dr. Tillotson sat about three hours to Mr. Lely for him to lay in a dead colour of his picture for me. He, apprehending the colour of the cloth upon which he painted was too light, before he began to lay on the flesh-colour he glazed the whole place, where the face and haire were drawn in a colour over thin, with Cullen's earth, and a little bonn black (as he told us) made very thin with varnish.

20 June. My most worthy friend, Dr. Tillotson, sat in the morning about three hours to Mr. Lely; the picture he is doing for me. This is the third sitting.

1 Aug. Dr. Tillotson sat to Mr. Lely about three hours for the picture he is doing for me; this is the fourth time, and I believe he will paint it (at least touch it) over again. His manner in the painting of this picture, this time especially, seem'd strangely different both to myself and my dearest heart from his manner of painting the former pictures he did for us. This wee thought was a more conceiled misterious scanty way of painting then the way he used formerly, which wee both thought was a far more open and free, and much more was to be observed and gain'd from seeing him paint then, than my heart cou'd with her most carefull marking learn from his painting either this, or Dr. Cradock's picture of his doing for Dr. Patrick.

We can interpret the last entry by supposing that LELY worked on the portrait during the absence of the BEALES, and consequently there was a concealed mystery to their eyes in the process.

Another painter whose method was not much understood by contemporaries was VANDYKE. The diary supplies the following information:—

1672, April 20. Mr. Lely told me, as he was most studiously looking at my bishop's picture of Vandyke's, and I chanced to ask him how Sir Antony cou'd possibly divise to finish in one day a face that was so exceeding full of work, and wrought up to so extraordinary a perfection—I believe, said he, he painted it over fourteen times. And upon that he took occasion to speake of Mr. Nicholas Laniere's picture of Sr. Anto. V. D. doing, which, said he, Mr. Laniere himself told me he satt seaven entire dayes for it to Sr. Anto. and that he painted upon it of all those seaven dayes both morning and afternoon, and only intermitted the time they were at dinner. And he said likewise that tho' Mr. Laniere satt so often and so long for his picture, that he was not permitted so much as once to see it till he had perfectly finished the face to his own satisfaction. This was the picture which being show'd to king Charles I., caused him to give order that V. Dyck shou'd be sent for over into England.

BEALE, as we have said, prepared colours, and LELY received portions as part payment of his portraits. A few of the entries may be given to show the value of paints in the seventeenth century:—

Delivered up to Mr. Lely one ounce of ultramarine at 2*l.* 10*s.*, one ounce towards payment for Dr. Tillotson's picture for me.

I have paid Mr. Lely towards the pictures of Mr. Cos. Brooke Bridges and Dr. Tillotson which he is doing for me, by several parcells of lake of my own makeing, which he sent for 17 Aug. 1671, and ultramarine and money, 13*l.* 12*s.*

In Aug. 1674 Mr. Lely had one ounce of ultramarine the richest at 4*l.* 10*s.* per oz. in part of payments betwixt us for Dean of Cant. Tillotson, and Dr. Stillingfleet, which he has done for me, and by lakes and ultramarines, according to account of the particulars 1673, 24*l.* 9*s.*: together 28*l.* 19*s.* So there is due to him 1*l.* 1*s.* in full payment for the two fore-mentioned pictures.

1676, May 26. Sent Mr. Lely an ounce of my richest lake in part of payment for Mr. Dean of Cant. Dr. Stillingfleet's and my son Charles picture which he did for me.

If all the people who gave commissions to LELY adopted financial arrangements like those of the BEALE family, he could not have kept up the state demanded by a king's painter, nor have acquired land which was valued at 900*l.* a year. He is said also to have acted generously towards poorer artists, and from what is recorded of him he does not appear to have been corrupted by his intercourse with the Merry Monarch and his Court.

PRINCIPLES OF CONSTRUCTION FOR ARCHITECTURAL STUDENTS.

By E. WYNDHAM TARN, M.A.

(*Continued from last week.*)

V. *Vaulted Ceilings.*

THE stone vaulting over Gothic buildings resembles the dome in some respects, especially when used to cover polygonal chambers, such as the chapter-houses attached to cathedrals. Vaulted ceilings are formed with light arched ribs springing from the angles of the polygon, or from the piers of a rectangular building. These arches carry the load of the ceiling between them, which load is made as light as possible. The ribs are built of voussoirs of uniform depth throughout, but are loaded from the springing upwards for some distance, in order to prevent them from breaking outwards at the joint of rupture.

In a roof over an oblong building there are the transverse ribs at right angles (on plan) to the side walls, say from A to B, C to D, &c., and there are also the diagonal ribs which are not at right angles to the walls, but cross from A to D, B to C, &c. If the transverse ribs are semicircular, then the diagonal ribs of the same height must be elliptical. When the transverse ribs are pointed Gothic arches formed of segments of a circle, then the diagonal ribs are also pointed Gothic arches formed of segments of a circle struck with longer radii than the transverse ribs, and often of greater height.

In order to find the thrust of the ribs at right angles to the wall at any point from which they spring, we must add the resolved part of the thrust of the two diagonals to the direct thrust of the transverse rib. Suppose the transverse rib to be semicircular and the diagonals elliptical, the ribs being 1 foot deep by 1 foot wide, and the weight of the panelling to equal the weight of the ribs; then if the diagonal ribs make an angle of 30 degs. with the transverse rib (on plan) and the span is 20 feet, we find the thrust of the transverse rib at the joint of rupture to be 13½ cwts., and that of the two diagonals (resolved perpendicularly to the wall) to be 31 cwts., so that the total thrust at right angles to the wall is the sum of these two, or 44½ cwts., acting at a height of 5 feet above the springing. Let the transverse ribs be placed 12 feet apart from middle to middle and the wall be 20 feet high to the springing, but carried up 5 feet more to the level of the joint of rupture, then its requisite thickness for stability is 3½ feet if solid throughout.

If instead of a continuous wall we have piers 3 feet wide at A, B, C, &c., then their thickness must be not less than 6 feet in order to insure stability, but the quantity of material required for the piers is less than half that used in the continuous wall.

Let us now suppose the ribs, both transverse and diagonal, to be formed of equilateral pointed arches, the span and other dimensions being the same as before, then the horizontal thrust of the transverse rib at the joint of rupture is 8 cwts., and that of the two diagonal ribs (resolved perpendicularly to the wall) is 18½ cwts., making a total outward thrust of 26½ cwts. acting at a point 5 feet above the springing. If the wall up to the springing is 20 feet high, then its thickness must be 2⅓ feet, if solid throughout, and 12 feet long. Where the vaulting is supported on piers 3 feet long their thickness must be 4 feet, where the wall is not continuous.

With any other length of span the thrust will be proportional to the square of the span, provided all the other dimensions are varied in like proportion. Thus, if the arched rib has a span of 28 feet, the depth being 17 inches, then the thrust will be double that of an arched rib 20 feet span and 1 foot deep, and four times as great for a rib 40 feet span and 2 feet deep.

If the height of the solid wall 12 feet long supporting the ribs 20 feet span is increased from 20 feet to 40 feet, the thickness must be increased from 2⅓ feet to 3¾ feet. But if it is reduced to 10 feet, its thickness need not exceed 1¾ foot.

In the case where the vaulting covers a circular or polygonal chamber with ribs springing from the angles and meeting in the vertex, the panels or filling-in between any two of the ribs will be in the form of a spherical triangle or figure cut out of a sphere by three intersecting circles, and being domical the joint of rupture will be lower down than in the arched vault over an oblong chamber, as we have shown previously in the article on domes.

Suppose, for example, that the pitch of the vaulting is that of the equilateral Gothic arch and the chamber is octagonal, with a span of 40 feet, each side being 15⅓ feet long, then the area of each panel will be 320 square feet, and it will weigh 160 cwts. if built of Bath stone 6 inches thick. The horizontal thrust at the base of the vault, or upon the top of the wall, will be 61 cwts. on each side of the octagon, and if the wall is 40 feet high and solid throughout its thickness must be 3¾ feet in order to insure its stability.

In the above calculation no account has been taken of the thrust of the ribs at the angles which can be resisted by buttresses built up outside the angles. The weight of one rib 18 inches deep and 12 inches wide will be 48 cwts., and the horizontal thrust at the joint of rupture (which here makes an angle of 15 degs. with the horizontal) amounts to 13 cwts. If the height from ground to springing is 40 feet, and the wall is carried up 10 feet above the springing, then a rectangular buttress 1 foot wide and projecting 2 feet from the wall will suffice for stability, the wall itself, as mentioned above, being 3¾ feet thick.

The ribs are here supposed to be carried on corbels let into the angle of the wall, or resting on the top of a shaft carried up from the ground. The wall is in all cases supposed to be carried up at least as high as the joint of rupture, so as to form a backing to the arch and prevent it from opening outwards at the haunches.

(*To be continued.*)

ST. OMER AND YPRES.

By Rev. W. S. Dixon.

THE tourist, taking the direct route from Calais to Brussels, generally runs through St. Omer, and leaves Ypres on his left. They are both, however, places of historical and architectural interest, and it is well worth while, from this point of view, to break the journey for two nights in order to pay them a visit. Ypres lies in rather an out-of-the-way corner of Belgium, and cannot without a little inconvenience be included in a short tour of the Belgian towns; but one can get out at Hazebrouck, after seeing St. Omer, run up to Ypres and drop down again to Lille, further up the main line in the direction of Brussels.

At St. Omer there are chiefly two things to see—the large church and the ruins of the abbey of St. Bertin. Both have fine square towers of the later Gothic period, that of the ruins of the abbey church being exceptionally high, and having evidently been a very handsome one. Towers of this kind are not unfrequent in the district; they may be seen at Dunkirk and Hazebrouck, that at the latter place being overtopped by a graceful spire.

The original importance of St. Omer, now decayed, centred around its abbey, founded probably in the seventh century. At that date the bishopric of Therouanne, now a small village near St. Omer, was of some note. Its bishop, early in the seventh century, succeeded in converting to Christianity the pagan "seigneur" who lorded over the district where the town now stands, worshipping in a temple of Minerva. A church was built, and three monks from the abbey of Luxeuil were sent to carry on the good work of the bishop. One of these, St. Bertin, founded a monastery, around which was formed a town, which took the name of the bishop who had been responsible for Christianising the locality. The abbots of the monastery of St. Bertin, gradually acquired great fame and influence alike in Flanders, Burgundy and England. In connection with England, it was they who responded to the call of Alfred the Great and sent over learned monks to assist him in his educational work; and later on it was they who gave shelter to Thomas à Becket when he fled from Henry II. By the time of Becket the commerce of the town, of which the formation has been mentioned, had attained a most flourishing condition; it became even a kind of port, as it was possible to bring vessels up the river Aa at high tide from the sea. Afterwards, owing to the conflicting claims made upon it by France, Flanders and England, it passed through many vicissitudes, and frequently during the Middle Ages underwent siege and pillage. At the time when the Spaniards held the Netherlands they got hold of St. Omer and kept it for two centuries, but it passed finally into the hands of France in the seventeenth century under Louis XIV. During the war of the Spanish succession St. Omer had her Joan d'Arc, a woman named Jacqueline Robins, leading the inhabitants in a successful resistance to an assault made upon the town "en passant" by the Austrian forces under Prince Eugène after the victory of Malplaquet. The abbey church, of which the remains now stand, was reduced to its present condition of wreck at the first French Revolution. It was the third church of the abbey, the first two, built respectively in the seventh and eleventh centuries, having perished; it belongs to the Flamboyant or Third Pointed period, viz. the fifteenth and beginning of the sixteenth centuries. There remain at the present time the great western tower (much battered), one side of the nave and a piece of the transept. The tower, as in the case of the church of Notre-Dame at St. Omer, rises above the façade to a great height. The general appearance of the upper part is that of the famous towers of the Perpendicular period in England (such as those of Gloucester, Taunton and many parish churches in North Wilts, Gloucester and Somerset), only with less prominence to the Perpendicular lines, the curved tracery in the windows adding to the grace of the French tower, which yet falls short of the airy beauty of the Ladies' tower at Lincoln (fourteenth century), or the Angel tower at Canterbury. But the tower of St. Bertin is not in the centre of the building, but itself forms part of the façade, and its top part is of real beauty. The pretty tracery of the two windows in each of the four sides, the light parapets and the four angular turrets—in the stage below the windows, the wall arcading and pediment; beneath these the broken outline of a fine rose window, below which is the outer wall of the gallery which connects the staircases of the tower, and then, on the same plane, the portal below—all these form a combination which is of an exceptional kind. Unfortunately the outer surface of the lower part of the tower has suffered much in the general decay. In the rest of the ruin we may just see the pointed arch and clustered shaft of the nave arcade.

The church of Notre-Dame, however, presents a more complete architectural study. It was commenced in the eleventh century, but the work hung fire, and most of the present building dates from the twelfth, thirteenth and fifteenth centuries respectively. The east end represents the period of transition between Romanesque and Pointed (twelfth century), the south portal represents the First Pointed (thirteenth century) and the western tower and buttresses of the nave the Third Pointed or Flamboyant (fifteenth century). The tower is not so high as that of the abbey church of St. Bertin, but otherwise it is similar in construction and surmounts the west portal. It has large canopied buttresses running all the way up, similar to those of the western towers of York Minster. There are handsome flying buttresses to the nave, springing from detached buttresses, fluted and ornamented with finials and gables. At the south end of the transept has been one of those deep richly-sculptured portals which we find in the best French churches; we say "has been" because, though the outline of the portal substantially remains, and we can still trace its original beauty, the details of the work are much decayed, and the building generally on this side has such an unkempt appearance as to invite the hand of the "restorer." We shall now shortly describe the interior of the building. The nave has a central and one pair of side aisles, the latter rising to the height of the main arches. There are seven compartments or bays. In each of these the pier or ground arches are low and pointed; the piers themselves consist of one central and four engaged shafts; their capitals have rich sculpture and octagonal abacuses. The triforium, separated from the pier arches by a pretty frieze, has six plain lancet openings, and in the clerestory is one large window of six lights surmounted by Flamboyant tracery. The transept is similar to the nave, but has indications of an earlier date. The piers are rectangular in plan with only two engaged shafts; on the abacuses of the capitals of these shafts stand small columns which run up to support the spring of the vaulting at the foot of the clerestory windows; the triforium with one exception is in six parts, over each of which is a tiny rectilineal and ornamental arch cut into the wall surface. The pier arches are narrower than in the nave, but the clerestory windows are the same. In the choir the two bays which intervene between the apse and the transept are like those in the latter, with the exception that the clerestory has only three lights. But it is in the wall of the ambulatory or walk round the choir that we find the work of the twelfth century or Transition period. Here is a beautiful arcading of small round arches of three orders, resting on shafts, with such capitals of the Early English type as we see in the cathedral of Lincoln; only at St. Omer the abacuses are rectangular instead of circular. Were the arches pointed this would be genuine thirteenth-century work, but the round arch in this connection indicates the earlier date.

In the south-west corner of the nave, resting against the wall, is a remarkable specimen of thirteenth-century sculpture called "Le Grand Dieu de Therouanne," and consisting of a large seated figure of Christ, with the Virgin and St. John in smaller size praying, the former on the right and the latter on the left hand. It originally formed part of the decoration of the portal of the cathedral of De la Merimée, and at the destruction of the latter it was given to the church of St. Omer. The beneficence in the expression of the central figure, and the resignation in that of the Virgin, are well deserving of attention.

We have now to cross the frontier and spend a night at Ypres. The glory of Ypres in the political sphere has long ago departed. Its best days were in the fourteenth century, when the population reached 200,000, and when its fame for cunning workmanship in divers kinds of cloth was so great that it left its mark in the word "diaper" (d'ypres). In those days it was the capital of West Flanders, and held precedence over Bruges and Ghent. It did its share later on in the work of the revolt of the Netherlands, the contemporary historian of which (Phillip de Comines) had his home some twelve miles to the south-east of Ypres. But though politically and commercially decayed, Ypres can still show the finest block of Halls in Belgium (which means in Europe); it has a good church, it abounds in interesting old houses of Mediæval and Renaissance date, and it still retains an almost complete circuit of the old ramparts with moat still in a liquid state. The wealth of Belgium in civic buildings of architectural beauty is well known. The reason assigned is the wealth and independence of the Belgian citizens of the Middle Ages. Wealth meant power, and to have a bell (and consequently a belfry) was a symbol of power, and had also its practical use. In the case of two important towns the belfry was not detached, but formed part of the great hall of the city. These were Ypres and Bruges. The civic buildings themselves were of three kinds—first, town halls for the administration of justice and municipal work; secondly, trade halls for the sale of the staple industry, generally cloth; and thirdly, guildhalls or places of meeting for trade associations. Bruges, Brussels (for its spire), and Louvain show the best specimens in Belgium of the town halls. The best part of the block of buildings at Ypres is a trade hall, and the earliest and most magnificent specimen of the kind. It was founded in the year 1200 by Baldwin of Constantinople, and finished 104 years later. Fergusson describes it as follows:—"The façade is 440 feet in length, and of the simplest possible design, being perfectly straight and unbroken from end to end. The windows of each storey, all of one design, are repeated not only along the whole front, but at each end. The height is varied by the noble belfry, which rises from its centre, and by a bold and beautiful pinnacle at each end. The whole is of the pure architecture of the thirteenth century, and is one of the most majestic edifices of its class to be seen anywhere. It is pleasing from its simplicity and perfect adaptation of exterior to interior arrangements, viz. one vast hall on the ground floor, supported by several ranges of columns, with long galleries and great halls above it for the use of the trade to which it was appropriated."

Such is the description of the thirteenth-century Cloth Hall, but the whole block, to which the title of The Halls is applied, contains also the Town Hall, the "New Work," the Hall of Justice and the Council Chamber. The original Town Hall of Early Gothic was destroyed by fire at the end of the fifteenth century, and the Early Renaissance work which took its place has since undergone various restorations; and the present appearance of that part of the block, viz. the north-east corner facing the south portal of the church, is not in any way remarkable. The "New Work" is an elegant addition at the east end of the Cloth Hall, built in the early seventeenth century in the style of the Renaissance of Spain. A handsome arcading of ten arches supports by its pillars two storeys of rectangular pillars, surmounted by a roof in which are four pretty dormer windows and the gable end and glass window of the old aldermen's chapel. The walls at the east and west end of the building terminate in gables. The Hall of Justice, or Aldermen's Hall, was built at the same time as the large Cloth Hall and used for five centuries for transacting the judicial business of the community. It was decorated with fine mural paintings, of which some have lately been brought to light, and the whole room restored. After its disuse as a justice chamber in 1794 it became for a time almost a lumber-room, but is now used for marriages and as a reception-room. The old Council Chamber, now a magazine for arms, has the reputation of having been as handsome a room as the Hall of Justice, and is about to be restored in the same way.

Opposite to the north side of the Cloth Hall is the cathedral of St. Martin. Belgium does not take the same high position in respect of its ecclesiastical as of its civic buildings. The thirteenth century was far less of a church-building age for Flanders than it was for France, England and Germany. Only four churches of any note belong to this period, viz. St. Gudule at Brussels (since added to), Notre-Dame de Tongres, Notre-Dame de Dinant and St. Martin's at Ypres. The last is said by Fergusson to be "the purest and best specimen of the Gothic of the thirteenth century in Flanders." The choir (1221) has a touch of Romanesque in it. The nave and transepts are of the pure Gothic of the thirteenth century, but sadly need restoration in respect of sculpture and buttresses. The south portal is of the Flamboyant period. Above the portal is a polygonal rose window. There are two graceful turrets beside the gable of the roof. The large western tower is of the fifteenth century. The cylindrical columns in the nave are of blue stone, contrasting well with the white surface of the walls. The triforium has a light arcading of considerable beauty, as also in the choir, which otherwise is somewhat severe, having neither side aisles nor ambulatory. There are, however, two pretty apsidal chapels in the angles formed by the choir and the transept.

In addition to the famous Cloth Hall, Ypres also possesses another trade hall of the thirteenth century, viz. the Boucherie, or Meat Hall, of the same class as the beautiful Knochenhaueramthaus at Hildesheim. The upper storey and gables are of the Flamboyant period. Space forbids to allude to all the interesting old houses in the town; there is a group of three opposite the east end of the cathedral, behind the New Work, in yellow brick, and with graduated gables; there is the house of the Templars, the hospital and many pieces in the vast oblong market-place, in one corner of which stand The Halls. In short, no one will have seen all the best in Belgium who has not seen Ypres, nor can Artois be said to be without interest while it retains (besides Arras) St. Omer.

THE CONTEST ABOUT CELTIC ORNAMENTS.

THE following Parliamentary paper has been issued :—

In April 1898 the Irish Government forwarded to the Treasury a communication from the Royal Irish Academy, asking the Government to facilitate the passing of an Act to enable the British Museum to allow certain gold ornaments to be transferred to the museum of the Royal Irish Academy.

The gold ornaments in question had been found early in 1896 by a farm labourer whilst ploughing the lands of Mr. Gibson, near Limavady, in the north-west of Ireland. They passed into the possession of Mr. Gribben, a jeweller of Belfast, by whom they were sold to Mr. Day, a collector of antiquities, and a member of the Royal Irish Academy, who, after exhibiting them publicly in London in January 1897, sold them in the May following to the trustees of the British Museum for 600*l*.

In reply to a question in the House of Commons on March 29, 1898, the Attorney-General for Ireland stated that on the facts, so far as he had been able to ascertain them, these articles were in his opinion treasure trove, and belonged to the Crown.

It has for many years been the practice of the Treasury, under an arrangement made in 1860, to give the Royal Irish Academy the refusal of all treasure trove found in Ireland.

The matter gave rise to Parliamentary questions and discussions in the session of 1898, in the course of which it was several times stated that the difficulty in the way of the cession of the ornaments to Ireland lay in the fact that the trustees of the British Museum are precluded by statute from parting with any object which they have acquired, unless it is either a duplicate or is useless for the purposes of the Museum. To meet this difficulty Mr. W. Redmond brought in a Bill to legalise the transfer of Irish antiquities from the British Museum to the National Museum at Dublin, but the measure was not proceeded with. Ultimately the First Lord of the Treasury agreed to appoint a committee to investigate the matter, and a committee consisting of Lord Rathmore, Mr. John Morley, Sir John Lubbock, Sir John Evans, Sir Herbert Maxwell and Sir Thomas Esmonde was appointed accordingly by a Treasury Minute dated October 24, 1898.

In its report, dated April 5, 1899, the committee—(1) Related the circumstances under which the gold ornaments came into the possession of the British Museum ; (2) suggested certain regulations, "should it at any time be deemed advisable to make such regulations," to govern the proceedings of the museums of the three countries as regards curiosities offered for sale ; (3) recommended (Sir J. Lubbock and Sir J. Evans demurring) some relaxation of the present law preventing the British Museum from parting with objects which it has acquired.

On receiving this report the Treasury decided to obtain—(*a*) An opinion from the Irish Law Officers on the question whether the gold ornaments could now be successfully claimed as treasure trove against an adverse claimant ; (*b*) a joint opinion from the English and Irish Law Officers on certain further questions.

The Irish Law Officers, going somewhat beyond the particular point referred to them, advised—(1) That the ornaments are primâ facie treasure trove ; (2) that there has not been any sale of them in market overt ; (3) that an inquisition by a coroner is not a necessary preliminary to the institution either of a prosecution by the Crown for concealment or of a suit to recover the articles ; (4) that there is not anything in the statutes governing the British Museum which would enable the trustees to hold, as against the true owner, goods stolen but not sold in market overt; (5) that the trustees are therefore bound to give up the ornaments to the Crown if required to do so.

Before submitting the further case for the joint opinion of the English and Irish Law Officers, the Treasury communicated a draft to the trustees for their consideration. The latter thereupon put forward a further contention that the ornaments had been found in a field which, until within the last sixty years, formed part of the bed of the sea; that under these circumstances the articles could not have been hidden with a view to their recovery, and that they are therefore not treasure trove within Blackstone's definition of that term. A statement embodying this argument was added to the draft case.

The following joint opinion was given on February 2, 1900, by Sir R. Webster, Mr. Atkinson and Sir R. Finlay, on the several points referred to them :—

1. Whether the ornaments in question are treasure trove is a question of fact whether they were originally hidden or merely lost. If the circumstances as stated in evidence before the committee of inquiry be established by evidence, we think that the jury on an inquisition, or any court by which the question was determined, ought to find treasure trove in this case. It is a question of evidence. 2. Assuming the ornaments are treasure trove, they can, in our opinion, be recovered from the trustees of the British Museum. 3. As to whether the trustees of the British Museum would have any remedy against Mr. Day, by whom the ornaments were sold to the trustees, it would depend so much on the circumstances of the sale that we think it best not to express any opinion upon this point at present.

In March 1900 the Law Officers of the two countries were, at the request of the Irish Government, again consulted with regard to certain additional information which had been obtained as to the place in which the ornaments were found, and the circumstances of the discovery, and the following further joint opinion was given on March 20.

"Upon the facts now stated being established, we are of opinion that the articles in question should be adjudged to belong to the Crown as treasure trove.—Richard E. Webster, John Atkinson, Robert B. Finlay."

This further opinion was on May 17 forwarded by the Treasury for the consideration of the trustees of the British Museum, who on the 31st of the same month replied as follows :—

British Museum, May 31, 1900.

My Lords,—I am directed by the trustees of the British Museum to acknowledge the receipt of your lordships' letter of the 17th instant, transmitting for their consideration the case and joint opinion of the Law Officers for England and Ireland, dated December last, and also a further case and joint opinion, dated March last, respecting the Celtic gold ornaments found in Ireland and purchased in 1897 by the British Museum.

The trustees observe that, in their opinion on the two cases submitted to them, the Law Officers point to the establishment of the statements put forward regarding the finding of the ornaments and the site of their discovery as a preliminary step to the determination of the allegation that they are treasure trove.

The trustees would point out that, even within the memory of the witnesses whose statements are quoted, the sea has on more than one occasion burst over the land where the objects are alleged to have been found, and that the probability is that at the date to which the objects belong the sea extended further inland that it has done within the last few centuries. If such were the case the Law Officers would no doubt agree that the articles could not be treasure trove.

The trustees conceive that their position in the matter is clearly defined. Under the powers conferred upon them by Act of Parliament they purchased the ornaments as desirable objects for the public collections in their charge, and it would be a direct contravention of their duty as trustees to surrender the ornaments unless it be proved that they are in wrongful possession. It is not a question of the trustees abandoning the claim, as the Irish Under-Secretary suggests. The trustees have no option in the matter ; they are bound to hold possession of the objects, unless the claim of the Crown to them as treasure trove should be legally established, a conclusion which is consistent with the opinions of the Law Officers. If, then, in your lordships' judgment the claim of the Crown should be prosecuted the trustees must await the legal decision which your lordships will no doubt take the necessary measures to obtain.

But even if the claim of the Crown to the ornaments as treasure trove should be established, the trustees would submit that it should be a matter for grave consideration whether the rights of the Crown should be exercised by the removal of the ornaments from the national museum of the United Kingdom.

The trustees could not dispute the authority of the Crown to enforce those rights, but they cannot refrain from expressing their opinion that to remove from the custody of the British Museum objects which have been purchased in good faith for public use would create a feeling of distrust both among archæologists and also in the mind of the general public.

The trustees also feel bound to point out that a more stringent exercise of the law of treasure trove would have a lamentable effect on science, as it would lead to concealment of the circumstances under which objects were discovered, and to their being melted down or sold to other countries. The protracted delay of the Royal Irish Academy and of the Irish Government in setting on foot the necessary inquiries for the establishment of the claim to the ornaments as treasure trove is responsible for the controversy which has arisen. The trustees consider that they have acted in the best interests of the public by securing the ornaments, which otherwise might have been irretrievably lost.—I return the papers herewith.

I have, &c.

(Signed) E. Maunde Thompson.

The Right Honourable the Lords Commissioners of
Her Majesty's Treasury.

Upon receipt of this letter, and in view of the suggestion of the trustees that "if the claim of the Crown should be prosecuted the trustees must await the legal decision which your lordships will no doubt take the necessary measures to obtain," the Treasury on June 15 1900, instructed their solicitor to take whatever steps may be necessary to obtain a judicial decision on the question whether the ornaments are treasure trove.

NOTES AND COMMENTS.

The committee of the Wiltshire Archæological Society again call attention to the military works on Salisbury Plain. Enormous excavations are taking place for the purpose of levelling and improving ranges and erecting huts. As these works are chiefly being carried on by contractors who know nothing of antiquities, the committee fear that much of archæological interest runs the risk of being lost for ever. An appeal was made to the Marquess of Lansdowne to uphold and preserve from destruction the earthworks and other relics of antiquity with which the Plain abounds to an extent to which no other part of this country does, and in return a courteous reply was received, but the risks are not entirely removed, and continued watchfulness is necessary. At the annual meeting of the Society Mr. C. H. Talbot (ex-president) said it was owing to the fact of people knowing nothing about antiquities that a great deal of mischief was wrought throughout the country. He had long noticed in Malmesbury, where they were meeting, the remains of an early fifteenth or late fourteenth-century house in High Street, the doors of which were very interesting, but the house had been demolished. He did not suppose that the people of Malmesbury knew that it was a relic of antiquity at all. Of course it was unavoidable that buildings should be altered and sometimes destroyed, but at any rate they should not be destroyed in utter ignorance of what they were about.

From the indication which is given in the Parliamentary paper of the defence which will be sustained by the Trustees of the British Museum in any action which may be taken for the restoration of the gold ornaments found in the North of Ireland, it is evident that the judges will have to decide some exceedingly intricate points relating to archæology. But grounds on which lawyers profess to rely are selected for peculiar reasons. An archæologist would not, for example, deny that the objects found whilst ploughing in a field were treasure trove, because at one time the lands may have been subject to inundations of the sea, and therefore the ornaments may have been washed ashore. From a lawyer's point of view that theory may be easier to support than to overthrow. We have recently given Blackstone's definition of what constitutes treasure trove, and it will be contested that articles which at any time were covered by sea water cannot be included in the class described by him. The Treasury lawyers appear to have no difficulty in believing that the articles in question are treasure trove, and therefore belong to the Crown. The litigation, it is to be hoped, will not be injurious to the interests of archæology. It may yet be discovered that the ornaments have characteristics which would point to manufacture by continental Celts. Although it is habitual with Irish speakers and writers to claim every object that can be described as Celtic as if it were made somewhere in Ireland, there now seems to be little doubt that the finest works were not produced in the western island. Moore seems to have been aware of the fact by referring to the days "When Malachi wore the collar of gold which he won from the proud invader;" and, indeed, the personal ornaments must have been more admired when they were known to be derived from foreigners than if they were the products of Irish gold-workers.

It is not uncommon to meet with archæologists who believe that if they were able to undertake explorations in places which are known to them alone they would become millionaires. Etruria is supposed to possess sites of ancient cities which are believed to be equal to gold mines in their wealth, and which would give less trouble to seekers. There are parts of Africa which are assumed to be no less able to reward excavators. One spot is available which excited interest among the gold-seekers of ancient Rome. Among the gods of the Carthaginians was Eschmun, who could only be honoured by offerings in gold. His treasury was, therefore, unsurpassed in value. As the goddess Astaroth or Astarte was the object of much reverence, it was supposed in Rome that the treasure must belong to her and was to be found in one of her temples. When Nero received the information from Cecessius Cassus he despatched troops to bring back the gold, but as it was not discovered Cecessius was executed. Remains are still to be found which give support to the legends about the treasuries which were attached to temples in Carthage, and all of which may not have been plundered. Some years ago a man appeared in Tunis who seemed to be possessed of unlimited wealth. He had a companion who, to all appearances, was no less rich, and the conclusion was drawn that they must have had access to some subterranean treasury. When they perceived that attention was directed to them they decamped. After a time one of the men returned, and he sought for associates to join him in a venture which was afterwards discovered to be the exploration of treasuries. But a dispute arose between the members of the band and some of them were killed. Those who survived made several efforts to carry off the wealth, but there was always some obstacle, as if fortune did not favour the enterprise. Quite lately the circumstances were brought under the notice of the Academy of Sciences at Paris, but as there was some delay in considering whether the operations could be conducted by so august a body, two Frenchmen resolved to make the attempt at their own cost. It was then insisted that the State must be allowed one-half of the value of anything discovered, and a commission of five members was appointed to look after the operations. It cannot be said that up to the present the results are encouraging. The explorers have found remains, lamps and other signs of the primitive pioneers who may have been employed to construct underground works or to seek after treasures which were deposited in a still more ancient period, but gold in any form is not forthcoming. Unless money is subscribed or lent the latest attempts will have to be abandoned, and accordingly it has been proposed to form a limited liability company on a small scale, consisting of enthusiasts who believe that much of the gold gained by the Carthaginians in their vast commerce can still be found in chambers which were like modern safe depositories, and were dedicated to the gods as a further protection against robbers.

Monza, the pleasant town which was the scene of the tragedy on Sunday which deprived Italy of its king, has long had interest for archæologists. The basilica was founded by Theodelinda, the Lombard queen, in the sixth century. She was as much admired by the people as the English Elizabeth at a later age. On the death of her first husband they promised that whoever she selected as his successor they would obey. Her choice fell on Agigulphus, Duke of Turin. His crown remained at Monza until 1799, when it was removed to Paris and placed in the Louvre. In 1804 it was stolen from the museum, and melted down for the sake of the gold. More interesting, in an historic sense, was the iron crown which was supposed to have been made from one of the nails used at the Crucifixion. From the time of Charles V. it had not been used at coronations, but Napoleon insisted on having it placed on his head. It is related that Theodelinda ordered representations of the history of the Lombards to be used for the adornment of the walls of her palace, but it remains uncertain whether the work was a painting or a mosaic. In the more modern palace, of which Piermarini was the architect, the decoration consisted of a representation of the history of Psyche by Appiani, and the difference suggests the changes which occurred in the history of the Italian races.

ILLUSTRATIONS.

THIRD PREMIATED DESIGN FOR THE LIVERPOOL DOCK OFFICES.
PERSPECTIVE VIEW. ELEVATIONS. PLANS. BY JAMES H. COOK.

SECOND PREMIATED DESIGN FOR THE LIVERPOOL DOCK OFFICES.
ELEVATIONS. BY MESSRS. WOOLFALL & ECCLES.

THE LIVERPOOL DOCK OFFICES.*

We give this week the plans of Messrs. Woolfall & Eccles which obtained second prize in the competition. The following is a copy of their report and estimate:—Our report follows in order the paragraphs in the instructions and conditions issued to the competing architects. The size of the site (viz. 8,000 yards) is amply sufficient for the plan we have submitted. Our boundaries follow the outline of the site, and we have retained round same and within the limits of it an area for lighting the basement. The heights of the various floors are figured on the sections, the basement level being 23 feet above Old Dock sill.

Entrances for Public.

All people having business transactions with the various departments on all floors enter into a large oval hall, which has its approaches both from James Street and Brunswick Street. The oval hall, above referred to, we propose to make one of the architectural features of the interior design, using in its construction stone and faience, with marble columns to support the gallery corridor on the two upper floors. In the centre, the hall is widened out in an elliptical form, in which, on one side, are very wide and handsome double staircases; on the opposite five passenger elevators arranged with different speeds, to communicate with all floors. This widening allows of additional crush space where the public traffic will be greatest. Our aim in thus planning this entrance is, first, to concentrate the public having business with the various departments in close communication with the staircases and lifts, and also to make it unnecessary for the public to traverse long corridors in order to arrive at their various departments.

It will be seen that direct access is given to the rates and dues, harbour master, chief traffic manager and chief warehouse manager on the ground-floor; on the first and upper floors to all departments. The only exception being the treasurer's department on the ground-floor, which is approached from a corridor leading off the centre of this hall. We have also arranged in connection with this hall a public telephone call office and postal department, which, we feel sure, would be a great convenience to many having business to transact and wishing to communicate with their offices.

Official Entrance.

An entrance to the building is also arranged in the centre of the south front under the tower; to distinguish it from the public entrance we call it the "official entrance," and suggest that it be for the use of the heads of the various departments, female clerks, deputations and persons having business with the Board. It will be seen that it communicates with the ground-floor offices, the general manager's department, the engineer-in-chief, &c, and has close at hand a handsome staircase and lift.

A separate entrance is provided in the centre of the west front (river) for the exclusive use of the members of the Board, and we propose a carriageway to same through the ornamental grounds in front of the offices. The private rooms in connection with the various departments have windows to one or other of the various streets and are not lighted from areas.

SCHEDULE OF ACCOMMODATION.

The basement is utilised for storage, coals, heating, ventilating, &c. A cart approach to same is by an inclined roadway 15 feet wide, entering from Brunswick Street. A staircase is also provided at the James Street end. Some of the elevators will be arranged to descend to this floor for the conveyance of coal. The level of this floor is kept 23 feet above the Old Dock sill.

Ground Floor.

Rates, Dues and Post Entry.—This very important and busy office occupies the whole of the east side of the public corridor, and is amply provided with the means of ingress and egress for the public. The private rooms are on the south-east side, and are accessible both to the manager, public and clerks. Ample space is provided for the public attending, and is lighted by large top lights. The counter is arranged on a similar plan to those in banks, with a screen running behind same, and allowing each clerk or teller to have the entire control of his sections, with separate entrances to same. The clerks' desks are arranged in bays along the windows facing east, and ample room is allowed for book racks, shelving, cupboards, &c.

Note.—Provision has been made in all the departments for ample cloak-room accommodation, and it is suggested that these rooms be fitted up with a separate locker for each clerk, to hold his coat and hat as in golf clubs; that the bottoms be kept above the floors and warm pipes go underneath for drying purposes. We suggest that in these cloak-rooms it would be convenient to place the wash basins, as all cloak-rooms have outside windows and the wastes in all cases will discharge on to traps in the open.

Harbour Master.—On the south front and immediately adjoining the public entrance we have placed this department. The plan provides the full accommodation required. The clerks' offices have ample cross lights, and a private entrance is arranged from the official entrance. The graving dock office has a public approach from the main hall, without entering the office; the clerks in connection with same are adjoining.

Chief Traffic Manager.—This department enters out of the public hall and is placed on the north side, and has ample accommodation for the departments named in the instructions.

Chief Warehouse Manager.—This department occupies the remainder of the north side and portion of west; it has its own approach from public hall, with the manager's private rooms pleasantly situated; the room for overlooking the clerks has been arranged. This department is also approached from the official entrance.

Treasurer.—This is the only department that does not enter direct from the large public hall, but is in close communication. It occupies a portion of the west front, and contains a handsome general office, fitted up similar to a bank, with clerks' offices, waiting-rooms, and with approaches and exits from cash office, with attendant's desk in same; the treasurer's room and assistant treasurer's room and cash office all communicate with this waiting-room; an approach is also arranged from the official entrance.

First Floor.

General Manager and Secretary.—This very important department occupies the south front and part of the east side, and is in close communication with the staircases and lifts. The entrance vestibule is placed right in the centre, having to the right the manager's private offices, private rooms, and assistant secretary's room, with the committee clerks adjoining, the committee clerks' lunch-room and approach to board-room and committee-rooms On the left the estates and rating, writing clerks, &c. This is very commodious, and has top light. A framed office is in the centre for attendant, with counters on either side, and behind large waiting-room and messengers' room. The position of this department has been the key to the planning of the whole scheme, and we have therefore given it the most pleasant aspect, so disposing the manager's and the secretary's rooms and committee clerks' as to adjoin the board-room, to be convenient to the engineer-in-chief, and yet to keep the writing clerks', telephone, copying and other sections convenient. All the departments are very commodious and well lighted. The estate and rating department looks south, and has a large strong-room adjoining clerks' room, and table under a window is provided to examine documents, &c, on.

Solicitors.—The solicitors' department is on the Brunswick Street side of the building, and opposite the general manager's department, and contains the scheduled requirements, and is also in communication with the board-room and the committee-rooms, without using the public corridor.

Engineer-in-chief.—A large office is provided in the central tower, adjoining the general manager's department, and is in close touch with the board-room; it is approached from all the entrances. On the floor over is a plan-room, with circular stair communication.

Board and Committee-rooms.

This important suite of rooms occupies the whole of the west portion of the site fronting the river, and contains board-room and large committee-room, which takes up the centre of the front, and on either side are the smaller committee-rooms. A corridor is provided behind these rooms, having at either end a committee hall for clerks, &c, waiting, and from here access is obtained to the luncheon-room, board, cloak-room, &c. We have suggested that the board-room and large committee-room should have communicating doors.

Leading off the board-room corridor is the members' luncheon-room, having service at side. This service-room will be fitted with fireplace, hot hearth, and have its own private staircase to kitchen floor over. Food-lifts are provided. We have purposely kept a passage between this room and lunch-room to prevent the smell of cooking, &c. Ample cloak-room and lavatory accommodation is provided, and the water-closets have a disconnecting area, with a bridge over, thus giving ventilation all round. The chairman's private room faces south, and is in close contiguity with the board-room and staircase.

Room for Deputations Waiting.—This room can be approached from all entrances, and is so planned that the entrance for the visitors is from the general public corridor, and still has a door communicating with the board-room corridor. As we understand these deputations take many forms the position of this room has been very carefully considered.

Principal Accountant.—This department is very accessible to the public, is well lighted by cross lights, and the different sections of same have the full desk accommodation provided.

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* See Illustrations.

Auditors.—They are placed on the north-east corner of the site, and situated between the solicitors and the accountants; a communicating door can be easily arranged, if necessary, between this department and the accountants.

Room for Audit Commissioners.—This room occupies an important position at the end of the main corridor, and it is intended to make it a handsome department, adapted to its important use.

Second Floor.

The various departments to be located on this floor are amply provided for, and, in addition, there are several spare rooms. We have placed the accommodation for lady typewriters on this floor, with retiring-rooms and sanitary conveniences arranged on the same plan as the board-room ones. Their approach will be by the board-room stairs and away from the general public. The caretaker has also a room provided on this and upper floor to kitchen level, with communicating staircase, &c.

The third and fourth floors are planned for future additions.

Top Floor.

Dining-room accommodation is provided, consisting of large dining-room, divided by folding glazed screen; at one end is the service and at the other a room for reading, &c., after lunch. The kitchen adjoins the service, which is of ample size, and has in addition a smaller kitchen to be used as servants'-hall; kitchen office, scullery, larder, stores, &c., are provided; the lady typewriters have a separate dining-room. As these rooms will be formed partly in the roof, the difficulty of ventilating them satisfactorily will be an easy one. Caretaker's apartments and storage-rooms for papers are also provided. Lift communication is also provided to this floor.

Water-closet Blocks.—These are placed away from the offices and are entirely cut off from the building; they enter from the connecting central corridor, and are easy of approach from all departments. The windows in the water-closets do not face any of the office windows, but are kept on the corridor sides. They are in conformity with the Building Act.

Mezzanine floors are planned between the ground and second floors, and altogether sixty-four closets are provided for the officials and staff, three closets for the board-room, lady typists three and kitchen two—in all seventy-two. This includes for the two floors not appropriated, viz, third and fourth floors.

Materials, &c.

The materials proposed to be used in the construction are, for the outside elevation fronting the streets, stone from Cefn, Talacre, Bridgend, or other hard-wearing stone; the inside elevations, Aston Hall bricks; the roofs slated; the floors throughout of fireproof construction, covered with wood blocks; the public corridors and landings, mosaic and tiles; the staircase, stone. Joiners' work to ground and first floors, hardwood; other floors, pine. The construction throughout will be steel stanchions and girders to carry all floors, safes, &c., and cased with fireclay slabs or other uninflammable material. The roof will be of steel filled in with breeze concrete, with slating bedded and nailed to same. The strong rooms will be of two thicknesses of fire-bricks, with air space between, ventilated and lined with steel. The windows in lower floors to be double glazed to minimise the noise of the traffic. The glass screens in the offices that go to the ceilings between the different departments will be light bronze uprights, filled in with metal panels as high as the desks; above that height double glazing. Electric lighting and fire mains will be provided throughout the buildings. The various heads of departments will have telephone communication with their assistants. The various elevators will be worked by electric power of the Otis or other well-known kind; space for the machinery is provided on top of building.

The board-room, committee-rooms and dining-rooms will be finished with marble columns and pilasters having hardwood panelling between and to be of handsome design, the upper part of walls covered with frescoes. The principal staircases and corridors will be of stone and faïence. The sanitary fittings will be of the best and latest type, and the w.c. blocks tiled throughout. We propose that the heating and ventilation be of the Baird-Thompson system, which, reduced to its primary parts, comprises inlets for fresh air at different points filtered and moistened in summer, and warmed in the winter by passing over steam pipes, and then conducted to the different outlets. The warming system will be by steam, and the basement will be utilised for the control cocks to the various departments and under the supervision of the engineer, without having to go into the different rooms. The fresh-air admission valves will also be worked from the basement floor. Fireplaces are provided to all private rooms and shown on plans.

We find it would be next to impossible to have the windows to open, as the noise of the traffic in the street is so great, and further, the clerks being of different habits, some liking open windows, others not, we intend therefore to heat and ventilate the whole building by artificial means.

Cube.

For the levels we have followed the instructions, using the basement for storage, &c., and below this, where the foundations come on to the dock site, we carry them to the rock, filling up this foundation to basement level, and on the other portions where they come on to the quay we suggest piling, if the ground is found to correspond all over with the sections of boring given in the instructions, as these show that a good foundation can be obtained at about 14 feet down. In making up our estimate of cost these works are given separately. In concluding this report we wish to state that it has been our endeavour to design a straightforward and workable plan, one that will be found convenient for administration and for the public having business in the building, and to embrace within it all modern requirements and equipments.

Front Elevation.

In regard to the design for the elevations they will speak for themselves, but we wish to state that our idea of such a building is to have broad masses and strong horizontal lines, and to embrace in these ample windows, to give good light to the different rooms. The river front, as seen from the approach to the city from the Mersey, is designed to form an imposing group with the Brunswick Street elevation, and the recessed colonnade of this one has a repeat in the north-west return of the other. The angle in Mann Island is shown more particularly on the perspective. In the centre of this we have placed our clock tower, quiet and dignified as far as the top stage, and here we have attempted to vary it from the usual pointed finish, and suggest as a crowning feature emblematical figures, holding up a gilt copper globe, while at the corner of the lower stage would be figures of commerce, navigation, &c. The south front of Mann Island is simple in design, depending on its central feature, viz. the public entrance, for its enrichment. This doorway is selected for our ½-inch detail. The east front to the new street is as simple as possible, as per the instructions. Very little carving will be used in our design, but where sculpture is shown it is intended to have it executed by the best artists.

At either of the public entrances we suggest that pedestals should be provided for bronze statues of those whom the Dock Board wish to honour.

Cube and Estimate of Costs.

The plans have been in the hands of our surveyors to arrive at the estimate of costs. The following is a copy of their report:—

To filling up old dock, piling to old quay, foundations to buildings 2 feet below basement floor level, forming inclined cartway with retaining wall and paving cartways to basement	£10,000
900,000 cube feet. Basement from 2 feet below floor level to ground floor level, including surrounding areas and retaining walls and railings (measurements taken up to line of streets all round), at 6*d.* per cube foot	22,500
2,600,000 cube feet. Ground, first and second floor storeys, at 1*s.* 4*d.* per cube foot	173,328
2,000,000 cube feet. Third, fourth and fifth floors and roofs, at 10*d.* per cube foot	88,333
111,000 cube feet. Tower, domes, turrets, gables and chimney (measured above roof), at 3*s.* per cube foot	16,500
Total cost	£305,661

Note.—This estimate includes heating, ventilating, sanitary arrangements, drains, electric lighting and decorations, but is exclusive of furnishing.

We thank the committee of the Dock Board for permitting us to submit a design for such an important building, and are fully aware of the responsibilities which such a splendid site imposes upon an architect. The small scale sketches submitted can be but shorthand notes of the perfect scheme, yet we hope they will be sufficient to convey our ideas for this building.

III.

We also publish this week the design by Mr. J. A. Cook, to which the third premium was awarded. The following is his report:—

Gentlemen,—In response to your invitation, I have much pleasure in submitting for your consideration the designs sent herewith, in the preparation of which I have endeavoured to comply fully and fairly with all the conditions and requirements laid down for the guidance of competitors. The shape of the site is a somewhat unusual one, and calls for a treatment both as to plan and elevation peculiar to itself. Its main façade being composed of three planes, of which the two outer do not agree in angle with the central one taken as a base, naturally forces the designer to adopt some means to connect these in such a manner as to overcome their differences and present harmonious and balanced frontage. For this purpose I have introduced circular towers at the junction of the planes, which fit the rounded angles given on the plan of site furnished me;

and further, I have kept my building fully up to the boundaries of the site on this western end, and by balancing the lengths of the flanking sides I am enabled to effect a saving in area of land required of 264 square yards, in a strip 9 feet wide along the eastern boundary.

The main entrance from an architectural point of view must naturally be placed in the central one of the three planes. This I have recessed and flanked on either side with pavilions and the towers before mentioned. The resultant effect of this treatment is to give a feeling of breadth to the central block, and so assist to emphasise its importance in the composition. In this matter the towers give a great assistance, as can be seen by reference to the perspective view, which is a true rendering of the plans and elevations, and in no way forced. I am, of course, aware that the entrance in this position is not in the line of approach from the shipping offices, which is altogether from the eastern side, from the James Street and Water Street direction, but in a building of this size it is neither desirable nor possible to provide one entrance which shall serve all purposes. Therefore minor but still important entrances have been provided from Brunswick Street and the proposed new street, both of which will be in more general use than the main entrance. Many instances of this arrangement can be given, of which our own Municipal Offices in Dale Street and the Manchester Town Hall may be mentioned, in both of which the main entrances are rarely used by the public. The main entrance will in the position I have assigned to it be chiefly an official entrance, from the fact that all the cars running to the Pierhead pass right before it, and to have it freed from all the bustle of the youths seeking the rates and dues offices will be an advantage most desirable. In the internal planning of an office building the chief essential requirement is simplicity of corridor arrangement, and this, to avoid all confusion, should be an absolute repetition on each floor. The way about when once inside the building should be an obvious one, and it must be possible to be in touch with all departments on any floor without having to travel far out of a direct course from point to point. By the scheme I give all these points are adequately met, and it would be impossible for any one to experience the feeling of being "lost" (a complaint often made in connection with large buildings). Fitting this into the square shape of the building, and using the spandrels for light courts, and with other light courts as the plans show, this main corridor and all minor corridors are lighted by windows opening to the outer air—practically throughout their entire length. I have arranged this main corridor to give entrance to offices and staircases only, and have entirely freed it from all direct communication with the vent cuts to the several lavatories—the coal-lifts, janitors' rooms, service stairs, &c., which are all planned to open from minor corridors, giving them a very desirable seclusion. All the vent cuts are fully open to the outer air on one side and to the larger areas on the other, so that thorough cross ventilation will be insured, and by their being situated away from the offices the lavatories will give no offence. The internal arrangements of these places are fully indicated on the plans, and the accommodation provided is ample in water-closets, urinals and wash-basins; and they are conveniently disposed so that no great distance has to be traversed from a given point. I am of opinion that to group this accommodation to one point is inadvisable for a building of so large an area, and would prove exceedingly wasteful of time and in every way inconvenient. The accommodation for ladies is made on the first floor, and could be repeated if requisite on any of the floors above. The vent cut in this instance is for an obvious reason made to be entered from the main corridor. The internal areas for corridor light and ventilation are large enough for the purpose they have to serve, and are planned with all due economy of space; these and the main central light court will be faced with white glazed brick. This court has been made of such a diameter and size as to insure all the offices grouped around it being efficiently and pleasantly lighted, with the outlook as agreeable as possible, and it is the only court giving light to offices. The office accommodation asked for in the various departments demands a plan which shall permit of large general offices to which the public will have access being provided on each of the several floors, and here again my corridor shape fits in and helps the scheme as the plans show, and at the same time allows the smaller rooms to be planned in connection with them with economy of space and all convenience. The rates, dues and post entry office is at the base of the main central light court, and is surrounded by the main corridor, thus securing for it the maximum amount of easy ingress and egress. Entrances to it are arranged immediately opposite the external entrances to the building from Brunswick Street and the new street, so the approach from the outside is direct. Other entrances and exit doors are provided, and the internal space within for the public attending being the circumference of a circle, is the best method of dealing with a large number of people, as it spreads them out and separates them, whereas a hollow square would have the contrary effect and would tend to congestion. Those using this office would quickly learn the location of the particular department they required and using the corridor would enter the office at the most convenient point, so greatly relieving the internal space for the public at busy times. The counter is over 200 feet long, and the clerks in attendance are separated from the general clerks' office by a bank screen. The principal's room completely overlooks and controls the clerks' office, being raised in level and having windows on the circular and from which all parts of the office can be seen. A large fan-shaped skylight gives light to this office in a thoroughly efficient manner, and being carried upon lightly constructed iron trusses curving in one span from slender columns on the line of the bank screen, the internal appearance will be quite satisfactory. I would draw attention to the keeping away of this skylight from the main wall of the light court, so that there is no hopper gutter to get choked, but a broad flat all round, which can be kept properly clean.

The board-room is situated on the north-west angle of the building, with double external windows commanding views down and across the river, and is most thoroughly isolated from the rest of the building, whilst as to external traffic, Brunswick Street will never be a traction thoroughfare, and this corner is well away from the roadway leading to the Pierhead. Internally, it is separated from the main corridor with lobbies from both points of approach, and these are in turn separated from the board-room by an ante-vestibule formed at their junction. This arrangement will secure for the board-room that quiet and seclusion which is so desirable. I have schemed and designed a room which will be handsome and rich in appearance, and have taken two storeys of the building to accommodate its height. I have shown a strongly coved and panelled ceiling, which, enriched with modelling and choicely decorated, gives possibilities for the making of this room as fine an apartment as anything of the kind to be found in the city. Its dimensions are 42 feet square and 28 feet high. The members' luncheon-room, coat-room, chairman's private room and "deputations," also a lavatory, are all provided, opening off these private lobbies, and the whole forms a thoroughly *en suite* arrangement, absolutely private to the members. Communication with the secretary and general manager's department is also made with one of the lobbies, so that business of the Board can be conducted privately. This department is for the main part grouped between the board-room on the one side and committee-rooms on the other, and these in turn have a solicitor's department adjoining. The large committee-room is arranged on the ground floor next the main entrance, and by means of the main staircase is in close communication with the committee clerk's office as it could be were it situated on the same floor. For the other departments I do not think it is necessary to particularise; the plans illustrate with sufficient clearness their disposition and internal arrangements as to minor offices, desks, &c., which though of necessity by no means final, have been well and carefully considered, and in all cases give the full accommodation asked for, occasionally a little in excess and everywhere without any crowding. Fireplaces have been provided in all private offices, and wherever possible in the larger ones for clerks, but independently of these I would propose to heat the building throughout on one general system, as explained later. The chimneys do not rise above the level of the roof cresting, and are in all cases behind it, consequently they do not show on the elevations and are no part of the external architecture.

The dining-rooms, kitchens, &c., are grouped around the central light court on the fifth or top floor, and have been well considered, so that the working of this department shall be as facile and economical as possible. The kitchen occupies a central position between the ends of the semicircular range of dining-rooms; it has light and ventilation on all four sides and is separated from the rest of the building by the vent cuts which serve to the lavatories over which this kitchen is placed. Each end of the dining-room has its serving-room, which would be fitted with proper hot tables, &c., the whole giving a thoroughly workable scheme. Special ventilation is provided and shown on the plans and sections. The service-stair is carried from basement to the roof, and is in immediate connection with this kitchen department. Dressing-room and lavatory accommodation is provided for the service use on an attic floor, entered from this stair. The general staircases are placed in such positions as will readily afford facility of communication from floor to floor, and each is of easy rise and of generous width, with large stair wells, in which I have shown passenger-lifts running the full height of the building, a necessity in an up-to-date office building. The power I would use for these would be electricity from the city mains. On each floor there are fire hydrants arranged at four points, each with a hose reel, so that all parts of the building could be reached and the fire attacked quickly. I also show a mail chute for the posting of letters on each floor of the building, with a box receiver on the ground floor, which by arrangement with the postal authorities could be cleared at stated times. The chute is situated at a point convenient to the whole building, and is in direct contact with the room for copying and despatch of letters. The lighting of the building would be by electricity, with all wires laid in armoured coverings, all properly grouped and with switch, cut off, and fuse boxes, and so arranged that the burning out of a fuse would not cause any part of the building to be left in total darkness. The heating would be by steam, from boilers situate in the centre of the building on the basement floor. Radiators would be fixed in the window recesses, with ventilator bases connected with fresh air inlets from the outside, as shown on the sections, and the heating would be planned as a complete system for the entire building, including all vestibules, halls and corridors, so that there would be an equable temperature throughout, with a consequent absence of all draughts. I am of opinion, based upon personal experience, that with a building properly heated and ventilated, fireplaces, except for appearance, are superfluous, and also entail unnecessary expense both in the building of them and in their use.

The ventilation is shown in principle on the sections as far as the small scale to which they are drawn would permit. The inlets are described above. The outlets would be by flues in the corridor walls carried up to the top of the buildings, and there connected to a foul-air trunk formed above the ceiling of the main corridor on the top floor. This trunk is divided to work sectionally from three points so as to insure even extraction throughout and avoid long pulls, fans at each outcast being provided, driven by electric power. Two of these outcast shafts appear on the new street elevation, and the third is in connection with the flèche on the main façade.

The basement plan explains itself. There are two entrances from the new street, the one nearest Mann Island being for the admission of goods, coals, &c. Ample coal storage is provided, convenient to the heating chamber and to the lifts. Coal would be brought in bags and conveyed by trolley to the various places. The remainder of the floor is devoted to storage purposes, all outside rooms having windows above the street level, but which will amply light them. The level of this floor is 3 feet below that of the sidewalks, and consequently areas are not a necessity, but should such be desired they can easily be made along the recessed portions of the fronts. The drainage is shown on the block plan. All pipes would be bedded in concrete within the limits of the building, with inspection and cleaning chambers at the junction of all groups. The plumbing throughout would be of the most advanced type, with the traps of all water-closets, wash-basins and urinals separately ventilated, to insure freedom from syphonage, and all would be exposed. All water-closets would be properly ventilated by the special flues shown on the plans. The construction throughout would be fireproof, all ironwork being thoroughly encased, and columns, exposed girders, &c, lathed with expanded metal and plastered. The floor construction would be steel joists and girders, with concrete breeze filling between. The roofs would all be of steel construction, properly encased, the portions slated having tee-bar purlins, with porous terra-cotta slabs between, bedded in cement. The flat portions would be constructed similarly to the floors, and finished with asphalte. No timber for constructional purposes would be used, and such as will be used for finishings, &c., I would suggest should be fireproofed by the non-flammable process.

Materials.

For the street frontages stone from either the Old Darley Dale, Derbyshire, or the Cefn Quarries. External steps, a fine grade of Yorkshire stone. Internal walls and the backing of stonework, brick. Slates for roof, green Westmorland. Crestings and gutters, stamped sheet copper, as also the encasing of the flèche. Copings and internal sills, York stone. Area and light court facing, white glazed brick. Basement floor, concrete throughout. Corridors and lavatories, mosaic finish. Office floors, pitch-pine boards on embedded sleepers. Board-room floor, oak parquetry, and English oak panelling from floor to spring of ceiling. Doors, casings and trim throughout, oak. Windows glazed with plate-glass, skylights with rolled plate, protected with wire guards.

The architectural treatment of the façades is conceived on broad and dignified lines, in which massing and grouping are used for emphasis rather than any particular elaboration of detail, and I think the resultant effect of my efforts is a building thoroughly in keeping with its purposes, strong in character and in no way over elaborated. The style is an adaptation of modern French Renaissance. I have very carefully cubed the building from 2 feet below the basement floor to the top, including all vent shafts and the flèche, &c., and I put the net total at 5,858,400 cube feet. The cost of building materials has increased considerably during the last year, 50 per cent. having been added in some trades, and the all-round average advance being equal to fully 20 per cent., therefore should present prices maintain at the time estimates are procured for this building, I think the cost would be found to be at about an average of thirteen pence per cube foot, at which price my building would work out to cost about 317,000*l.*

Foundations.

These represent an area of 7,785½ square yards, of which approximately 4,521½ yards would be on the dock and 3,264 yards outside on the made-up land. I am acquainted with the evidence given by your engineer, Mr. A. G. Lyster, at the arbitration proceedings, February 1899, and note his proposal to secure a proper foundation for buildings erected on this made-up land by pile driving to rock, and also the cost at which he estimates foundations under both circumstances, and taking his figures as a basis, the cost of foundations for my building would be about 16,500*l.* I hardly think, however, such a system would be the best that could be determined for a building of this extent and size, and I should fear the walls cracking at the point where the stepping would occur, seeing that part would be built off the solid rock with no possibility of settlement, and part on a foundation by no means equally certain. I have, therefore, shown all my walls (which would be built of concrete) carried down to rock. As near as I can scale it, the average depth from road surface to rock is about 40 feet, and 5 feet of this would be excavated for the basement, leaving 35 feet. My suggestion would be to excavate half of this depth, and dig trenches for walls in the 17 feet or so remaining, and get all down to rock. I estimate the additional cost entailed by this method to be about 2,500*l.*, and I think that in an undertaking of this magnitude to make sure of the foundations would be worth the increased expenditure. It is difficult to determine the best way of treating the part of the site not to be built upon, but which will be retained as "ornamental ground." The possibilities it presents being exceedingly limited, I have indicated a method, and show an isolated raised platform, about 18 inches above the footwalk level, with steps all round, and shaped with a certain amount of symmetry. The idea recommends itself to me, as it permits the public to freely circulate round the building without their having to go round this plot, and it permits the building to spring from a common platform of flagging all round. It is also a variation from the commonplace railings or post and chain idea. The drinking fountain would have its uses, and the trees, by being in tubs, could be changed, and so kept looking respectably fresh.

OXFORD COLLEGES, ETC.*

(Concluded from last week.)

ALL SOULS COLLEGE was founded by Henry Chichele, Archbishop of Canterbury, who associated Henry VI. as co-founder (Chichele had founded St. John's College nine months earlier). In the charter dated 1437 it was styled "Collegium omnium animarum fidelium defunctorum," and was a memorial of Agincourt, the members being under an obligation to pray for the souls of Henry VI., the founder, and especially of Henry V. and all faithful subjects who fell in the wars for the Crown of France. The foundation-stone was laid by Chichele on February 10, 1438.

The chief entrance to the college is from the High Street. Over the gateway are the original statues of Henry VI. and the founder, and in a canopied niche above a group representing "The Souls in Purgatory." The first quadrangle is interesting, as it remains in the same state as designed by Chichele, except that the windows were cut square in the seventeenth century.

The chapel is entered from a vaulted porch, with fan tracery, in the north-west corner of the quadrangle. It was consecrated in 1442 in the name of the four Latin fathers (St Jerome, St. Ambrose, St. Augustine and St. Gregory). During the Dissolution it suffered severely, the beautiful reredos being nearly destroyed and other parts of the chapel wrecked. In this state it remained for nearly a century. After the Restoration the mutilated reredos was concealed with plaster and covered with a fresco of "The Last Judgment," by Streater, the Court painter, and the fine roof was filled in with panels decorated with huge figures. Early in the eighteenth century its appearance was altered to the Italian style, the walls being covered with costly marbles and rich painting and gilding, and Streater's fresco at the east end covered by a painting representing "The Assumption of the Founder," by Sir James Thornhill. In 1769 the painting by Raphael Mengs, "Noli me tangere," now hanging in the ante-chapel, was placed over the altar. During 1870, in the course of repairing the roof, traces of the original reredos were discovered, and this led to a complete restoration of the chapel by Sir G. G. Scott in 1872-75, the cost (5,000*l.*) being chiefly borne by Earl Bathurst, a fellow of the college. It is now perhaps the finest collegiate chapel in England, its reredos being certainly unsurpassed. Many of the figures are portraits of fellows of the college, the sculpture being by E. C. Geflowski. The fine hammer-beam roof and the stalls, desks and *misereres* are original work with slight restoration. Some of the stained-glass windows in the ante-chapel are contemporary with the founder, one containing his portrait and those of Henry V. and Henry VI. The large west window is by Hardman (1862), those in the choir, by Clayton & Bell, being of a more recent date. The screen, by Sir Christopher Wren, is all that remains of the eighteenth-century restoration.

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* A paper read by Mr. Frank E. Spiers, before the members of the Upper Norwood Athenæum at Oxford, on July 14.

The hall was commenced in 1729, and is the work of Dr. Clarke. It is a spacious room of lofty proportions and contains several fine portraits, among others Henry VI., Archbishop Chichele, Linacre (founder of the College of Physicians), Archbishop Sheldon, Bishop Jeremy Taylor, Bishop Heber, Sir Christopher Wren, Colonel Christopher Codrington (founder of the library), Lord Salisbury (Chancellor of the University), by Richmond, and the present warden, Sir Wm. Anson, M.P., by Herkomer. There is also a large picture by Sir Jas. Thornhill representing "The finding of the law—King Joshua rending his robe." The windows were filled with stained-glass to memorialise six esteemed worthies of the college, viz. Wren, Codrington, Lord Talbot, Sir W. Blackstone, Bishop Heber and Lord Salisbury.

Adjoining the hall is the buttery, with a fine groined roof designed by Dr. Clarke. Here is kept the founders' salt cellar, wrought in silver and crystal and standing 18 inches high.

The library, on the north side of the inner quadrangle, was built in 1716-56, under the superintendence of Dr. Clarke and Sir Nathaniel Lloyd, from a bequest by Colonel Codrington (a fellow of the college and Governor of the Leeward Isles). Its exterior design is somewhat debased Gothic, the interior being Italian. It is a fine gallery, 200 feet long, and contains upwards of 80,000 volumes, many of great value—one alleged to have been printed at Oxford in 1468, being nine years before Caxton was printing at Westminster. There is also a fine collection of Wren's original drawings for the rebuilding of St. Paul's and laying out of the City of London after the Great Fire. On the south wall of the library, facing the quadrangle, is the dial designed and given by Sir Christopher Wren, while a fellow of the college. It was originally placed in the first quadrangle.

The east side of the inner quadrangle, containing the twin towers of Nicholas Hawksmoor, a pupil of Wren, was built between 1700 and 1721 by various benefactors, and in 1734 the quadrangle was completed by the addition of the piazza on the west side.

All Souls was founded as a college for teachers rather than students, the foundation consisting originally of a warden, forty fellows, two chaplains and four Bible clerks—the latter being the only undergraduate members.

The Old University Schools.

The schools where lectures and examinations were held in early times were chiefly in Schools Street, which extended from the west end of St. Mary's Church to Broad Street. In 1439 Thomas Hokenorton, abbot of Osney, conceived the idea of collecting them into one building, which he erected on the ground that had been occupied by the old school houses. It contained ten rooms, one each for the seven arts and the three sciences. In 1554 the University obtained the grant of the site and repaired the buildings. The divinity school had for many years been held in the Old Congregation House, and there it remained until 1480, when the University completed the beautiful divinity school under Duke Humphrey's library. The present schools, with Sir Thomas Bodley's library above, were built between 1613 and 1618. The principal entrance is through a rich groined archway under the great tower (1620) on the east side. The massive folding oak doors are ornamented with the arms of the colleges, concluding with Wadham, which had been recently founded. Entering the schools by the south gateway, the great tower is to the right. On it are represented the five orders of architecture, viz. Tuscan, Doric, Ionic, Corinthian and Composite, in the fourth tier being a statue of James I., during whose reign the tower was erected. The whole is surmounted by a parapet of rich Gothic design with battlements and pinnacles. The names of the various schools may still be seen over the doorways, but the rooms were given over to the Bodleian Library in 1882, when the new school buildings in the High Street were opened.

The Bodleian Library.

The first University library was that built by Adam de Brom over the Old Congregation House, to hold the books bequeathed by Bishop Cobham in 1327, as described in the account of St. Mary's Church. It was removed in 1480 to the large room over the divinity school, built by Humphrey, Duke of Gloucester, son of Henry IV., to contain the magnificent library of 600 books presented by him to the University. This is the oldest part of the Bodleian. The present elaborate roof was put up by Sir Thos. Bodley.

Sir Thomas Bodley, the founder of the library, was born at Exeter in 1544. He was a scholar of Magdalen College and Fellow of Merton, 1563. Later, he was engaged in the diplomatic service in Denmark and Holland. In 1598 he made an offer to the University, which was accepted, to refound the library and procure benefactions and endowment for it. Two years were spent in refitting the old library, the shelves of which had been removed in 1554, there being no need for them since the valuable MSS. of Duke Humphrey had been destroyed and dispersed through the reforming zeal of Edward VI.'s Commissioners. Sir Thomas commenced the new library by building the eastern wing that runs at right angles to Duke Humphrey's library, but he died in 1613, before its completion. The other three sides of the schools' quadrangle, the rooms of which now form part of the library, were completed in 1618, the first stone having been laid in 1613, on the day after the funeral of its noble founder. The architect was Thos. Holt, of York. The western wing, over the Convocation House, was added in 1634-40.

The Radcliffe Library.

The Radcliffe Library (Camera Bodleiana) was erected in 1737-49 through the munificence of Dr. Radcliffe, of Lincoln and University Colleges, physician to the court. Mr. James Gibbs was the architect. Upon the completion of the new University Museum in the parks in 1861 the books given by Dr. Radcliffe (which were mostly connected with physics and natural science) were removed there, and the building was given over to the Bodleian Library as a reading-room, since which time it has been known as the Camera Bodleiana. A magnificent view is to be had of Oxford and the surrounding country from the gallery that surrounds the dome.

St. Mary's Church.

The church of St. Mary the Virgin existed long before the Conquest, and was originally a Saxon church. It is mentioned in Domesday Survey, 1086, as follows:—"To the lands which Earl Alberic held belong one church and three mansiones, two lie to the church of St. Mary and one lies to Burford." St. Mary's was much indebted to Bishop Hugh of Lincoln, who took part in the rebuilding at the latter end of the twelfth century. A second dedication of the church took place in 1197 by Bishop Hugh.

The present tower was built about 1280-1300, the beautiful spire, 188 feet high, being completed in 1310. Edward I. and Queen Eleanor passed a fortnight at Oxford in 1286, and took great interest in the building, collecting funds for it.

The Congregation House, with the room above it, at the north-east of the church, was built by Adam de Brom, who was installed rector in 1319. The vaulted ceiling is probably a portion of Bishop Hugh's work, but the upper room was certainly added by De Brom about 1320-27, to receive the books bequeathed in 1327 by Bishop Cobham, this forming the first library of the University. The books were removed to Duke Humphrey's new library in 1480. The present Perpendicular windows on the north side were inserted in 1510 to harmonise with the rest of the church. In the Congregation House all University matters were at one time discussed and decreed, and for many years the University chest was kept here. It is the only part of St. Mary's that the University can claim as its own, the church itself belonging to the parish, though from time immemorial the University sermons have been preached at St. Mary's and important functions connected with the University performed here. In 1325, Adam de Brom founded Oriel College, and shortly after St. Mary's was appropriated to Oriel as a vicarage, so far as the parish church was concerned.

De Brom also rebuilt in 1320-27 the lady chapel, since known as Adam de Brom's Chapel. It was originally dedicated to St. Mary the Virgin, and was, no doubt, an important part of the old building. The north wall on the inside is probably part of the Norman structure. Its position in the north-west of the church is very unusual, although at Canterbury Cathedral, the lady chapel, which existed before the Conquest, is similarly placed. The windows on the north side were inserted at the same time as those in the Congregation House, 1520.

The present chancel dates from 1462. A good deal of the woodwork of the seats, desks and panelling is original. The poppy-heads of the desks are said to have been cut away to support the platform erected in the chancel for the trial of Cranmer, Ridley and Latimer in 1555.

The nave, an excellent specimen of Perpendicular architecture, was built between 1490 and 1503, Henry VII. contributing to the work. The seats, pulpit, galleries, &c., were erected in 1827. The great west window is by Kempe and is a memorial to the Rev. J. W. Burgon, Dean of Chichester and vicar of St. Mary's from 1863 to 1874. It is a "Jesse" window, the general design and effect being exceedingly good. This nave has many historic recollections. Here Cranmer received his death sentence in 1556; Queen Elizabeth heard Latin disputations in the nave in 1566 and again in 1592; James I. came here in 1605; Laud occupied the pulpit in 1606 and again in 1614; John Wesley preached in 1744; and among later preachers are Keble, Newman, Pusey, Liddon, Arnold, Stanley and Jowett. There are many monuments, brasses and other memorials in the church of great interest.

The beautiful porch, surmounted by the figures of the Blessed Virgin and Child, with its elegant twisted columns, is the latest portion of the church, having been built in 1637 by Dr. Morgan Owen, chaplain to Archbishop Laud, who was at that time chancellor of the University. Over the ancient porch was originally a "parvise," approached by a door on the left of the entrance, where the students underwent their first examination, "responsiones in parviso," now known as "Smalls."

Mr. T. G. Jackson, R.A., says of St. Mary's, "Save the Abbey Church of Westminster, no church within this realm (cathedral, collegiate or parochial) possesses associations comparable to those attaching to St. Mary's; round none do the memories of a great past centre more thoroughly."

St. Giles's Church.

St. Giles's Church is one of the earliest in Oxford, and is particularly interesting as illustrating the rise and progress of Early Gothic architecture. It marks the transition from the circular to the pointed arch. According to Rouse of Warwick, it dates from the time of the Conquest, in which case it was probably one of the churches said to have been built by Robert d'Oilly. No mention is made of it in Domesday Survey, but that may be accounted for by its being outside the city walls. St. Giles was the patron saint of lepers, and churches dedicated to him are usually found at the extremity of the town to which they belong. The vicarage was instituted in 1200 by St. Hugh of Grenoble, Bishop of Lincoln, one of whose crosses may be seen on the west pillar of the north arch of the tower. St. Hugh died in 1210. The earliest mention of the church is in 1138, when the advowson was bestowed for ever on Godstow Nunnery, the grant being confirmed by the Empress Matilda and her son Henry II. After the Dissolution it passed through various hands, and is now under the patronage of St. John's College, having been purchased with the Manor of Walton, in which it stands, from the proceeds of a bequest by Sir Thomas White. Archbishop Juxon was vicar of St. Giles's 1609-15.

The tower is the oldest portion of the building, and dates from the early part of the twelfth century. The lofty east arch of the tower is supported by massive columns, the caps and bases of which resemble the earliest of those in Christ Church Cathedral. The belfry is of a later period. The walls of the chancel, with the broad circular arch on the south side, the low round arches in the north and south aisles, and the pointed windows in the north wall, are probably of the same date as the tower. The chancel and north aisle date from about 1200-20, and the lady chapel at the east end of the south aisle about 1260. The windows on the south side and porch are also thirteenth century, as are the arches of the nave, with a clerestory of a later date. The font is an exceedingly good specimen of Early English work.

Conclusion.

I cannot but regret that it has been quite impossible, in the space at my disposal, to do anything like adequate justice to the general historical, architectural and archæological interest of the buildings we have visited to-day. I have done my best to place before you all points and details of special interest in as concise a manner as possible. Last year we saw Magdalen and New Colleges, the Divinity School and St. Peter's-in-the-East Church. This year, with a whole day instead of only an afternoon as on our last visit, we have seen five colleges, viz. Worcester, St. John's, Wadham, Brazenose and All Souls, the Old Schools, the Bodleian and Radcliffe Libraries, and St. Mary's and St. Giles's churches. It has been a good day's work, and the interest has been considerably enhanced by the kindness of Mr. E. W. B. Nicholson, librarian of the Bodleian Library, Mr. C. F. Burney, librarian of St. John's College, and Rev. K. Lake, of St. Mary's Church, for so kindly receiving us, giving us the history and showing us the chief points of interest in the Bodleian, St. John's and St. Mary's respectively.

Finally, I have great pleasure in acknowledging the valuable information I have obtained from the following works, viz. "St. John's College," by Rev. W. H. Hutton; "Worcester College," by Rev. C. H. O. Daniel; "Oxford and its Colleges," by J. Wells; "The Colleges of Oxford," by Andrew Clark; "Oxford," by Chas. W. Boase; "St. Mary's Church," by Rev. E. S. Foulkes; "Guide to St. Mary's Church," by Catherine Thompson; "St. Giles's Church," by J. Park Harrison; "Historical Handbook of Oxford," by James T. Moore; and the very excellent "Oxford Guide" books by James Parker and E. C. Alden; and personally to Rev. C. H. O. Daniel, Rev. W. H. Hutton, and Mr. A. C. Etheridge for special information given me with reference to Worcester, St. John's and All Souls Colleges.

THE RECORDS OF ROCHESTER BRIDGE.

Last week there was a reference in *The Architect* to the Wardens of Rochester Bridge, and probably many of our readers were surprised to learn so ancient a corporation continued to exist, and to exercise its powers. At one time the importance of the duties entrusted to the wardens was so great as to appear as if they held the key to the capital. Mr. Brigstocke Sheppard does not exaggerate when he says:—

> Rochester Bridge—the conduit-pipe through which, from the earliest times quite down to our own day, were forced all the mingled streams of politics and commerce which flowed between London on the one side and France and Italy on the other—was an important station upon the highway of Mediæval civilisation.

In the most remote days the duty and cost of keeping the bridge in repair was divided between various dignitaries, assisted by funds furnished by certain assigned manors, known as contributory lands. To the Archbishop of Canterbury was assigned the maintenance of one pier (*pera*) and a certain number of beams (*sullives*), another was kept in order at the cost of the bishop of the diocese, the contributory lands being responsible for the rest of the structure. The first bridge was constructed of timber, and, naturally, some part was continually yielding to the violence of so large a river as the Medway, in addition to which it suffered greatly more than once during the civil wars of the thirteenth century, so that by the middle of the fourteenth century its condition was so hopeless that it was removed, and in its stead was built that stone bridge which, with such alterations as were from time to time demanded by the greater tonnage of the ships passing under it, lasted up to the middle of the present century. When the stone bridge superseded its timber predecessor, the authority which managed its affairs was remodelled; two wardens were appointed—Sir John Knollys and Sir John Cobham being the first to hold office—who, with twelve assistants elected yearly from among the tenants of the contributory lands, were formed into a corporation empowered to receive and pay money and to sue and be sued. At the same time a license was granted permitting the court of Governors to purchase freehold estates—proper lands—whose rents should be used to supplement the payments made by the contributory lands. The old stone bridge has made way for one more suited to the demands of modern traffic, but the governing corporation remains, and rules the new bridge as it did the old one.

At the east end of the stone bridge stood a chapel, of which Sir John Cobham was reputed the founder. Of this chapel the walls remain adjoining to the new "bridge chamber," where, in a fireproof room, the records of the bridge are stored. A final readjustment of the affairs of the bridge was made under an Act of Parliament in the eighteenth year of Queen Elizabeth, and a constitution was then prepared by Sir Roger Manwood, which is still at work. The documents, which are in the possession of the wardens and assistants, are but few in number, and do not, for the most part, bear date earlier than the sixteenth century, when Sir Roger Manwood's reforms came into operation. Among the archives of the bridge there are mixed some records belonging to the ancient college of Cobham, which was closely related to the bridge by the fact that Sir John Cobham in the thirteenth century was a benefactor to both, and the chapel of the bridge was closely connected with the college at Cobham. At the dissolution of religious houses (31 Henry VIII.) this connection became closer, for the college having been transformed into an almshouse, the wardens of the bridge were made ex-officio *presidentes* of the new charity, and its revenues were charged, apparently not for the first time, with the payment of considerable contributions for the repair of the bridge.

A manuscript volume (about 8 by 8 inches), bound in black sheepskin, and dated 1586, contains a collection of copies of all the ancient records relating to the bridge which Sir Roger Manwood thought worthy of compilation, and of the by-laws enacted under his patronage for its government. The title reads:—

"A true discourse of the ancient wooden and present stone bridge at Rochester, and of the lands proper and contributory thereto, and of the very causes of the decay of the said stone bridge and for the course taken for reformation therein. Collected by Sir Roger Manwood, Lord Chief Baron of Her Majestie's Exchequer."

The first record copied is the report of an inquisition taken before the king's escheator in the fifth year of Edward I., and it has the reference "ex Turri London ex bundello Escaetoris." Copies of other documents then follow, those relating to events in which Sir Roger was an actor being naturally the most numerous. Several other copies of this "true discourse" are to be found in the books of by-laws of various dates.

The chapel register is a thin vellum volume, about 10 by 10 inches, bound in oak boards covered with white leather. A large majority of the pages are blank, in fact the only formally written entry—probably that one for the recording of which the book was purchased—is the report of a suit thus entitled :—"Placita terre tenta in Hustengo London' die Lune proximo post festum Conversionis Sci Pauli, Anno regni Regis Henrici V^{ti} post conquestum IX^{no}." Here it is recorded that an executor propounded the will of one Will. Middleton, grocer and citizen of London, Thomas Fekenham and Robert Carpenter being the witnesses of the due execution of the testament, of which a copy is given. The testator leaves to his wife a life interest in certain tenements in London, with reversion to the Corporation of London, charged with the payment of many charitable bequests, including a perpetual annuity to Rochester Bridge. All the other entries in the volume refer to the affairs of the chapel on the bridge, and they are written in a current hand with much less formality than the record above mentioned. On the fly-leaf is a memorandum, probably intended as a guide to the priests whose duty it was to commemorate the founder and his family on their respective anniversaries. The first entry is, "Fait a remembr qe Mouns. Joh. de Cobeham, pier de Mouns. Henry de Cobeham, morust le xxj jour du March lan de nostre Seignur Jhu. Crist MCCLXXXIX."

The next page presents a list of benefactors to the bridge, apparently complete up to the date of compilation—the middle of the fifteenth century :—Sir Rob. Knollys, one of the founders of the sayed brygge and maker of the chapell, with all the apparell, also amortysyng theretoo the maners of Tylbury and Grean, whyche ys wurth xl marc yerly above all repryses. Also James of Pecham yaff and morteysed to the sayed brygg the manor of Nerschenden the whych ys wurth yerly x marc above all repryses. Also Syr Thomas Langley, Bysschop of Dyrham, yaff and mortaysed the Crowne with iij other rentes with a grownde called Walsches ierly wurth xxi marc.

Nichs. Potyn, John of Frenyngham, Will. Warnford (who gave a tenement at the "Schafft" in Cornhill), Charles and William Snette, Robert Chychele, Stopyndon Master of the Rolls, Langdon, Bp. of Rochester, John Darell, Alex. and Will. Lynne, Richard Whetyngton of London, Will. Martyn, and the "Kyng's Armener," were other benefactors who assisted in the endowment. Later entries record the names of the Marshall of Ynglond, Lady Cath. Culpeper, John Martyn Justyse, Sir Thomas Aruyndel Bischop (Chichester), Will. Cheyne Justyse and others.

The wardens' accounts occur in two forms:—(1) Ancient rolls, of which there are only three—15th and 23rd Richard II. and 1st Henry IV. (2) Bound volumes forming a series, apparently unbroken, from 1592 to the present time. In the rolls, the wardens debit themselves with receipts amounting to about 80*l*. a year, which amount is increased as the accounts extend forwards in date.

The Cobham College deeds are few in number, and all relate to the post-Reformation almshouse, none of the records of the earlier College of Secular Priests being preserved in this collection. As the intimate connection between the college and the bridge only began at the dissolution of monasteries, this is no matter for wonder. The history of the annexation of the college to the bridge is told in two documents :—

1. "An Acte for the establishment of the New Colledge of the Poore at Cobham, in the county of Kent."

This recites the intention of Sir W. Brooke, K.G., Lord Cobham, and Chamberlain to the Queen, to found the college, his premature death, and the Acts of Sir John Leveson, Thos. Fane, and Will. Lambarde, who carried out Lord Cobham's intentions after he was dead. A note attached to the MS. copy informs us that, this being a private Act of Parliament, is not contained in the printed edition of the Statutes, and, therefore, that Fras. Burrell, an assistant of the bridge, transcribed it for thu use of the court.

2. "The counterparte of the bargaine and sale for the Colledge of Cobham."

In this case Sir John Leveson, as executor of Lord Cobham, conveys the lands of the old college, for the purpose of endowing the new foundation, to trustees "upon special trust" that they shall procure a license to alienate the said lands to "the Presidents of the New Colledge of Cobham," that is to say, to the wardens of Rochester Bridge.

When an almsman was presented, the authorities of the parish whence he came gave the presidents of the college a bond, warranting them against any loss or damage contingent upon their acceptance of the person nominated. Of these bonds there is a considerable bundle.

A single volume contains the annual statements of the college paymaster from the forty-first year of Elizabeth to A.D. 1702. He sets down on one side the sums received, which he denominates "The Charge," and on the opposite page the payments made, which he names "The Discharge." The rents amounted to about 100*l*. a year. The signatures of the successive wardens, who audited and passed the accounts, form a collection of autographs of eminent Kentish commoners such as could not be easily met with elsewhere. Among them are those of Sir W. Sedley, Sir Francis Walsingham, Sir George Newman, John Marsham, Richard Head, Sir Richard Lee, Sir W. Colepeper, Sir John Tufton, Oliver Boteler, Sir Roger Twysden, William Twysden, Richard Manley and Sir Thomas Colepeper. William Somner was paymaster from 1633 to 1644. The payment to Rochester Bridge from the college appears to have amounted to about 30*l*. a year, but the exact sum is difficult to ascertain, seeing that in every account their paymaster is debited with partial arrears of one or more years' standing, towards the discharge of which he applies a sum of money "in part payment."

The only other record in the bridge chamber which appears to possess any interest is a quaintly arranged statement of the constitution of the well-known "Watts's Charity" in the city of Rochester, an institution which Charles Dickens revealed by his "Seven Poor Travellers." It is a roll of parchment so attached to a hollow roller that when it is tightly coiled up the roll disappears within the roller, and thus is protected from wear and tear. It is entitled:—

"A breviat of that is yerely, and from tyme to tyme, to be donne, touchyng the poore of the landes and tenements devised by Mr. Watts, and assured by Mr. Tho. Pagitt and Maryan their wyfe, for the lodgyng and releife of poore traveylours in Rochester."

The rules are set out and divided and subdivided with brackets in a style which reminds one of the arrangements on the pages of Thos. Fuller and other authors contemporary with him. The first paragraph has this form:—

Every Maior within tenne dayes next after othe taken	shall choose one or more	honest discrete able sufficient	cittizen or cittizens reseawts	in Rochester	to be officers w^{h} shall be called the Providours of the Poore.	To receave, and employe, the premeises as aforesaid,

The "Providours" thus chosen were directed to buy flax and wool, "to set the poor to work ;" and also to furnish every night a lodging and fourpence in money to poor travellers not exceeding six in number, and "not being wemen, rogues, procters, or diseased." The wool and flax supplied to the poor were to be returned in the shape of yarn, which the providers were to sell in open market, if possible at a profit, after paying the spinners. Each provider received for his pains 40*s*. a year and a fourth part of the profits of the yarn sold. The charity still exists, and under a new scheme its enormously increased revenues are widely and wisely administered for the relief of the destitute and afflicted.

THE REGISTRATION OF ARCHITECTS BILL.

COPIES of the following statement were sent to the members of the House of Commons prior to the day fixed for the second reading :—

The Council of the Royal Institute of British Architects are in opposition to the principle of the above Bill on the following grounds :—

1. The Bill proposes to provide for the legal registration of architects for the purpose ostensibly of enabling the public to distinguish qualified from unqualified practitioners, and makes registration under the proposed Act the evidence of qualification. By Clause 19 every person who was practising architecture prior to January 1, 1899, may register himself as a qualified practitioner, the immediate effect of which would be registration by a large number of persons respecting whose qualifications to practise as architects nothing whatever would be known, and it is but reasonable to suppose that the first to register would be those who felt that they were not able to face a qualifying examination such as that which is required from professional members of the Royal Institute of British Architects before admission to its ranks. By Clause 21 no person is to be allowed to use the title architect unless so registered, but by omitting the word architect from the title of architect and surveyor, which is commonly used, any person will still be at liberty to practise architecture, however wanting in qualification, so far as the provisions of the Bill are concerned.

2. The Bill, moreover, defeats its avowed object by specially exempting the professional members of the Surveyors' Institution and of the Institution of Civil Engineers from its most important provisions (Clauses 27 and 28), as surveyors very generally include the practice of architecture in their business, and many engineers do the same. The general public would gain little even by the enforced registration of only qualified "architects," seeing that the vast majority of ordinary dwelling-houses in the United Kingdom are not erected under the superintendence of members of the profession. If the Bill become law no advantage will accrue to the public, inasmuch as by its provisions a vast number of those who now practise architecture are either not required to be registered or are specially exempted.

3. The Bill may be fitly described as one to abolish the functions of the *bona-fide* architect and to substitute those of the surveyor and the engineer, without the guarantee of qualification that architects now possess. Much that, from an educational point of view, may be commendable in the Bill has been and is being accomplished by the Royal Institute of British Architects, with results which, under the provisions of the Bill, could only have been imperfectly obtained, if ever, at some remote period, and after incalculable injury had been done to architecture as well as to those qualified to practise it.

A meeting to consider the subject of registration was held in the London and North-Western Hotel, Liverpool, on the 26th ult. Mr. W. T. Emden, president of the Society of Architects, was chairman. He said that if the Royal Institute was prepared to take forward this question, upon which it had passed resolutions agreeing to the principle, the Society of Architects would be pleased to hand over to them such information and assistance as they could in order that the Royal Institute could take the forefront in getting the Bill passed into law. Unless that were done the Society of Architects felt that the only thing they had to do was to press forward in every way possible, in every town which was a centre of architecture, and take the opinions of architects with a view to carrying the measure into law.

Mr. Ellis Marsland said he wished to correct an erroneous idea abroad that this was the Society of Architects' Bill. That the Bill received its cordial sympathy and support was no secret, but it was not the Bill of this Society, and never had been. The advantages arising from registration were these:—Closing the doors to incompetent men, raising the standard of the profession and obtaining the confidence of the public and State recognition. He concluded by moving the following resolution:—"That this meeting cordially approves the principle of the statutory examination and registration of architects, and is of opinion that it is desirable, in the interests of the public and the architectural profession, to promote a Bill in Parliament for the attainment of this object."

Mr. Walter Thomas seconded, and it was agreed to, and the discussion was taken part in by Messrs. J. H. Govern, Peach (Southport), Griffiths and T. G. Williams. It was also resolved that a copy of the resolution be sent to every member of Parliament in the district.

Votes of thanks were tendered to Mr. Marsland for his paper, and also to the Chairman.

Letters heartily supporting the matter were read from architects in towns in Lancashire, Yorkshire and Cheshire.

A similar meeting was held in the Mosley Hotel, Manchester, on the following evening, when the resolution was adopted, with one dissentient.

On a motion that the resolution be sent to the local members of Parliament, Mr. Frank W. Mee, Manchester, observed that there was only one member of the local Society present. Although he was a member, he regarded the Institute as a dog in the manger.

Mr. Swarbrick also regretted that the local Society had not taken the matter up. It was time someone infused energy into their management of affairs. He was sorry to see the Institute so helpless in the face of so-called insuperable difficulties. This was a matter of as much importance to the public as to architects.

Mr. Edgar Wood, Manchester, said he had a conscientious objection to registration. They might call it an artistic objection if they liked, but until they could devise some means of testing the artistic capacity of a man, which he himself thought impossible, he would prefer to remain as they were. But all the same, the present position was very unsatisfactory.

Mr. W. C. Hardisty, Manchester, did not know in such a case who the judges were to be, as no two authorities agreed on any one design. Some means, however, should be devised of dealing with fashionable upholstering firms who practised as architects.

Mr. George put the case of the unregistered dentist, who escaped the penalties by calling himself a manufacturer of teeth, and asked how that difficulty would be met.

The President, in reply, said that if the Bill became law an unregistered man who erected an insanitary dwelling would be liable under the common law to prosecution; and in reply to Mr. Wood's objection he said that when a man began to practise they could have no guarantee of his artistic capacity, any more than they could judge the work of a great painter by his early examples. But they could insist on a sound knowledge of ancient and modern architecture, and a practical acquaintance with the details of the work a man proposed to do.

The resolution was passed unanimously.

M. Fernand Sabatté, pupil of M. G. Moreau, gained the first place in painting for the Prix de Rome; the two second prizes were awarded to M. Henri Rousseau and M. Ernest Azéma. M. Sabatté has already won several prizes at the Salon, and one of his works is in the Luxembourg Museum.

ENGLISH CROWNS.

A FILLET diadem of pearls appears on several of the Saxon Sceattæ; upon one or two others a radiated diadem occurs. Similar diadems or fillets adorn the heads of many of the Heptarchic kings, and continue as the most common crown upon our coins through the whole of the Saxon series. The circle surmounted by three small projections first occurs upon the coins of Athelstan; on some of Edred's coins the projections end in pearls. A radiated cap appears first on a coin of Ethelred II., and the trefoil ornament upon the crown upon a few of the coins of Canute. Several varieties of arched cap and crown appear upon the coins of Edward the Confessor. The close or arched crown which appears on some of Edward the Confessor's coins is used on all the types of Harold, and was adopted by the earlier Norman kings. On Edward the Confessor's and the Conqueror's coins we see labels appended at each ear; these, as we learn from an anecdote related by William of Malmesbury, in wearing the actual crown were fastened by a clasp or button beneath the chin. On the coins of Stephen and Henry II., the open crown with fleurs-de-lis appears. Henry III. wears on his seals a crown fleury, pointed or rayed, the points raised, but not high, between the flowers; in his second seal the points are wanting, as on that on his tomb; but in Mathew Paris we read he was first crowned with a circle of gold. Edward I. has a similar crown on his coins and seals to that of Henry III., as well as his queen upon her tomb; so have his successors, Edward III., Richard II., Henry IV. and V. Evelyn says the monarchs of England were the first who pretended to the arched crown; that is, as it appears in modern times. Selden says he had read that Henry V. was the first of them who had a crown of the kind. In a window of Ockholt House, in Berkshire, built by John Norreys in 1465, there appeared the arms of Henry VI. and his queen, Margaret of Anjou, in separate coats, both surmounted by the arched barred crown; from Henry VII. downward this arched crown with the globe and cross has been continued.

GENERAL.

Medals of Honour have been awarded at the Paris International Exhibition to the following German painters:—Herren Lenbach, Menzel and Uhde, and first-class medals to Herren L. Hertwig, M. Koner, R. Müller, F. Stuck and G. Knehl.

Signor Giacomo Boni, director of the excavations in the Roman Forum, has just discovered the Fons Juturnae, the spring well of the Roman nymph, *decus fluviorum*, out of which the inhabitants of the primitive town on the Palatine drew their water. The site of the well is close by the shrine of Vesta. The marble puteal bears a magnificent inscription of the first century A.D.:—M. BARBATIVS. POLLIO AED. CVR. IVTVRNAI. SACRVM. PVTEAL.

Mr. Onslow Ford, R.A., has accepted the commission to carry out the memorial to Mr. Ruskin in Westminster Abbey. The Dean has allotted to the monument a site in Poets' Corner, just above the bust of Sir Walter Scott.

Professor Van Norman McGee, of the department of civil engineering at the Imperial University of China, was among the foreigners who escaped from Tientsin.

The Trustees of the British Museum have arranged for the compilation of a complete index, classified according to subjects, of all the books in the Museum library, that is, practically, of the literature of the world.

The Society of German Engineers at the close of 1899 consisted of 13,928 members, a number in excess of the membership of any similar institution.

Messrs. Joseph Howe & Co., West Hartlepool, have secured the contract for the new asylum at Hellingly, Sussex, the amount being 228,814*l.*

The Wallace Collection will be open to the public free from 10 A.M. until 6 P.M. on Monday next (Bank Holiday) instead of, as usual on Mondays, between the hours of 2 and 6.

Tenders for the construction of the Cardiff Municipal Buildings will be received up to September 27. The chairman of the committee has reported that on a recent visit to the architects in London he found to his surprise that there had been but three applications for specifications.

The Chapel Committee have reported to the Wesleyan conference that during the year 95 chapels had been built at a cost of 288,339*l.*, 22 ministers' houses had been secured at a cost of 20,594*l.*, there had been 10 schoolrooms built and 40 organs had been placed in their chapels. The total expenditure amounted to 441,047*l.*

The general works committee of the Coventry Corporation have concluded their consideration of a report by the city engineer (Mr. J. E. Swindlehurst) upon the sewerage of Foleshill and Stoke, and decided to recommend the Council to adopt the scheme, the estimated cost being 32,962*l.*

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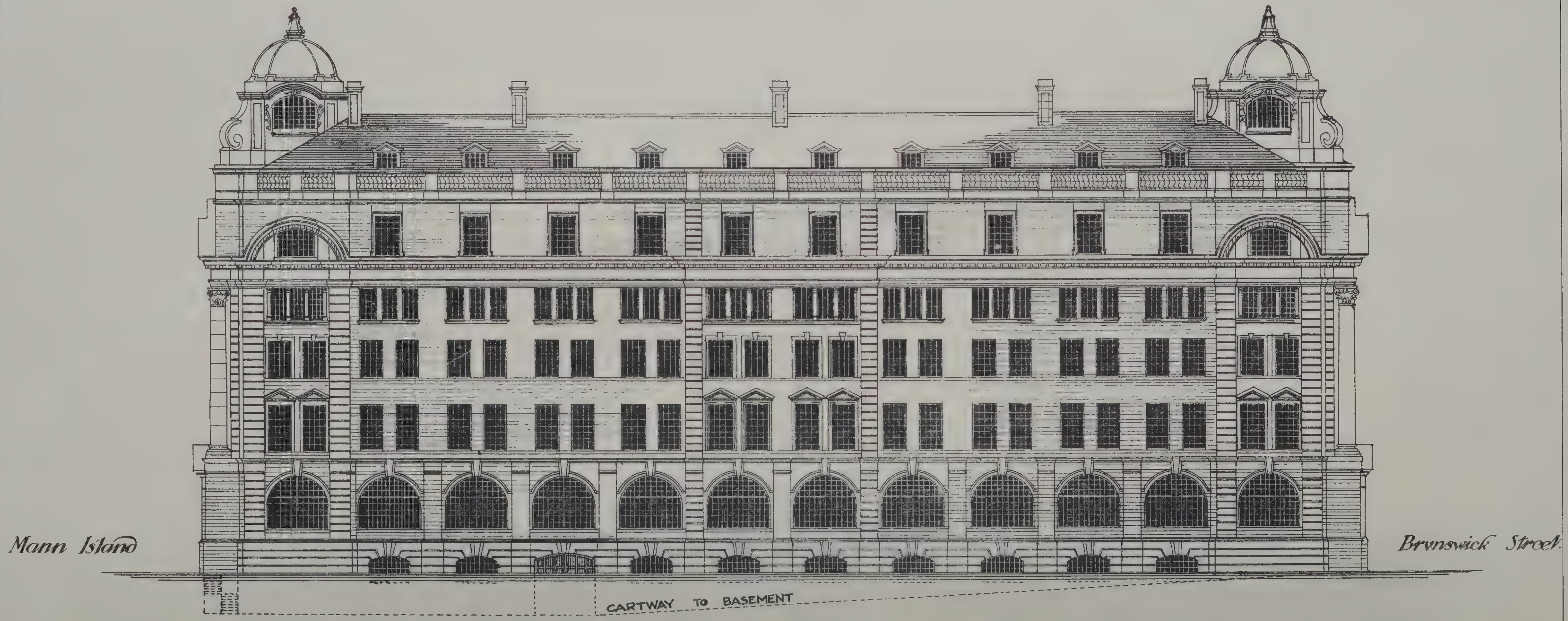
The Architect, Aug 3rd 1900.



NORTH-EAST ELEVATION

To proposed new Road.

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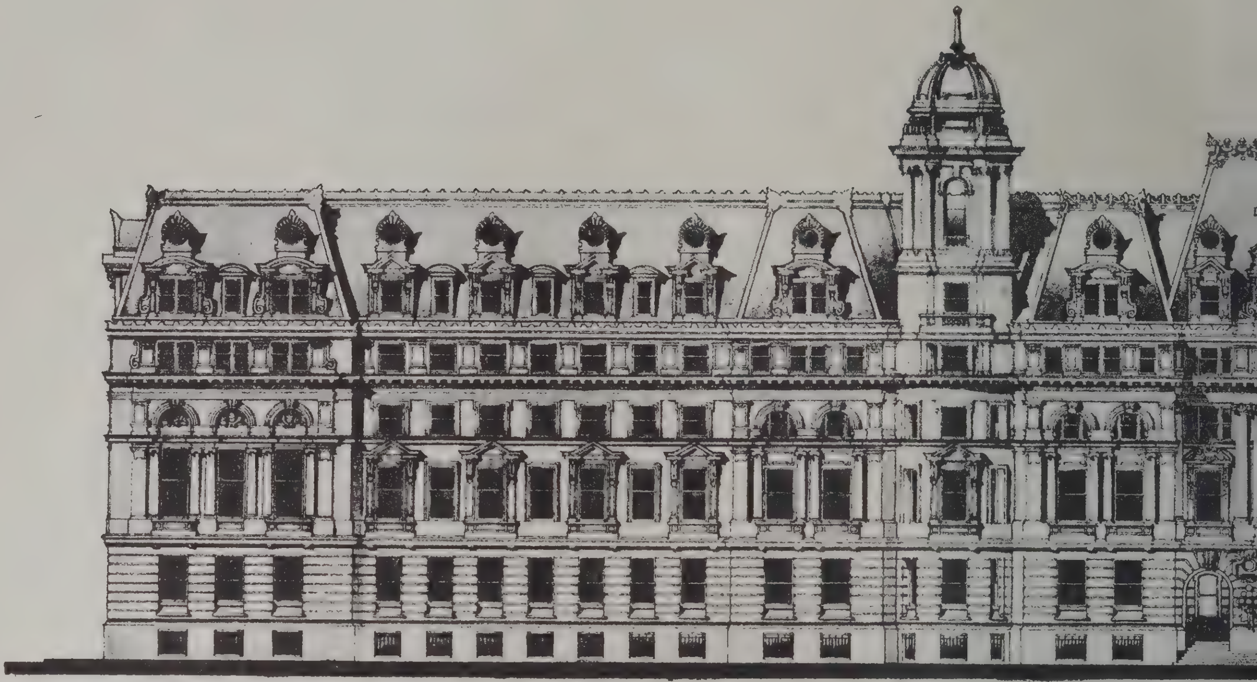

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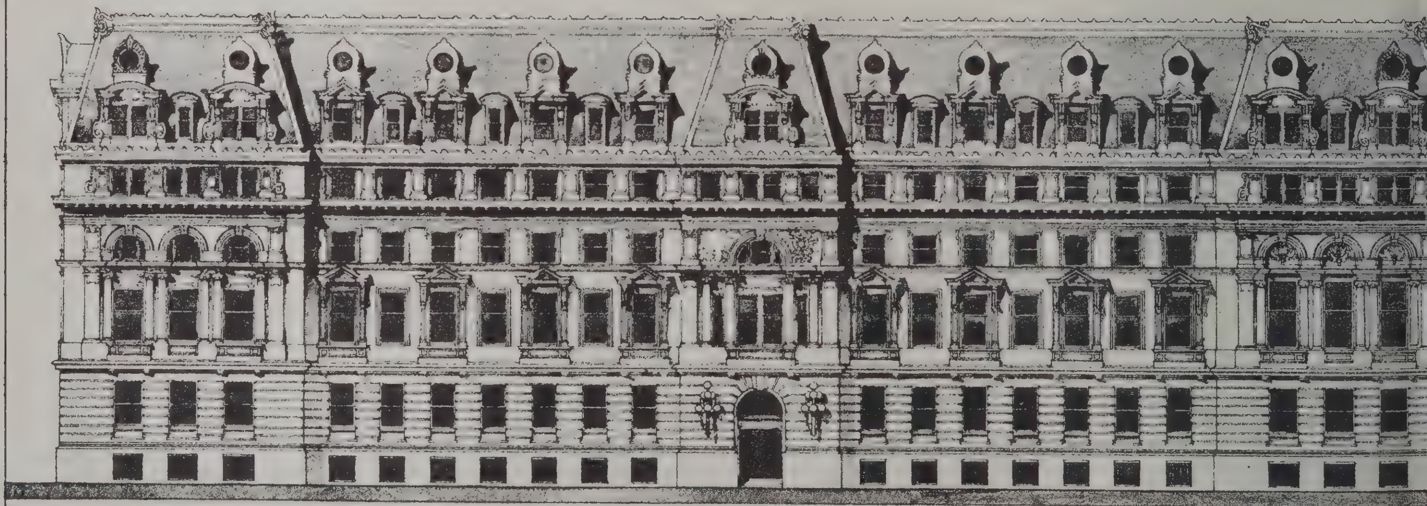

ELEVATION TO BRUNSWICK STREET

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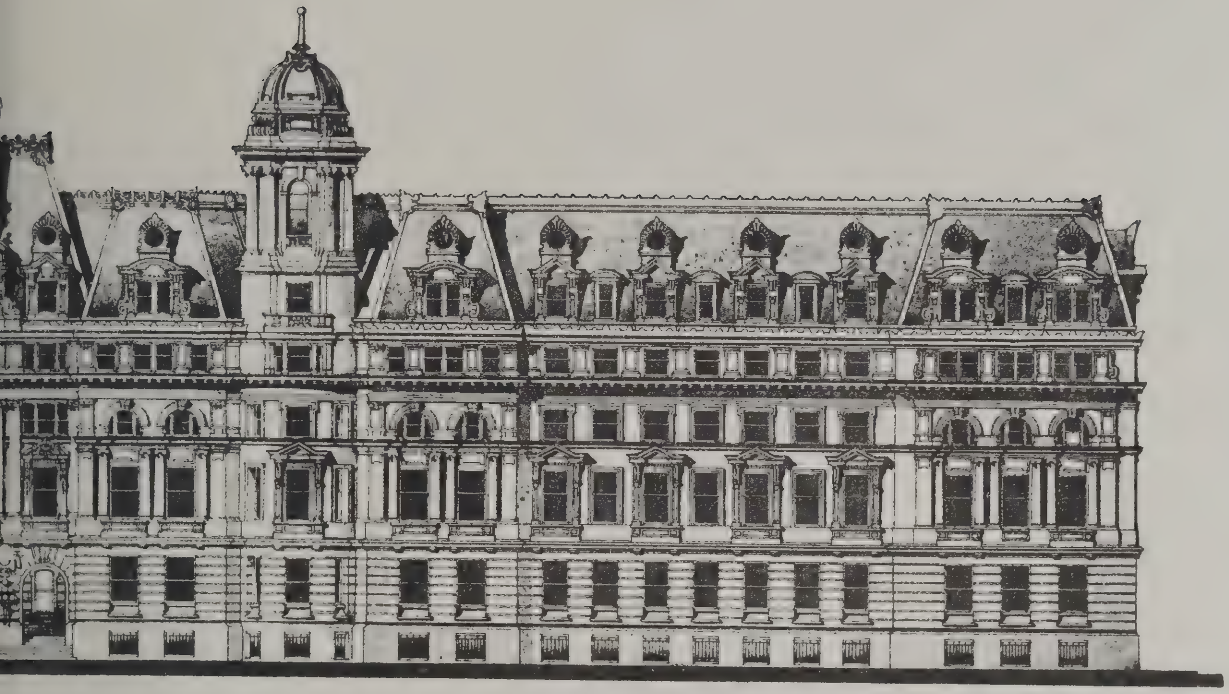
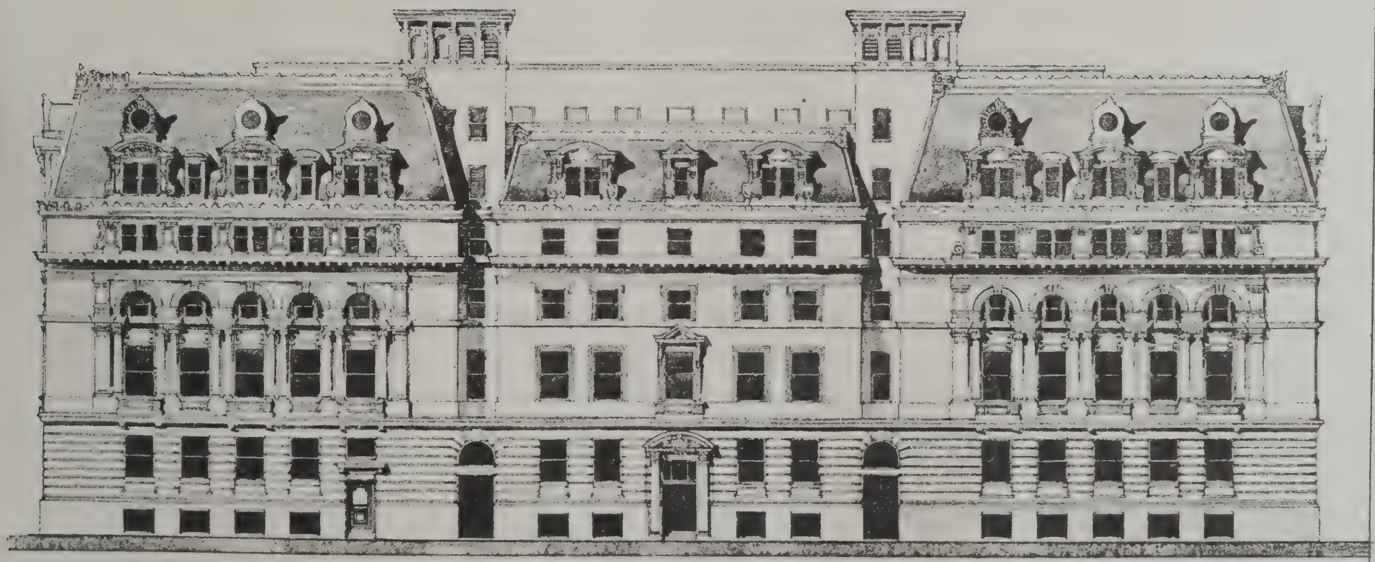
THIRD PREMIATED DESIGN FOR THE

By JA



OF MAIN FACADE



ELEVATION TO NEW STREET.

40 50

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RPOOL DOCK OFFICES. ELEVATIONS.

COOK.

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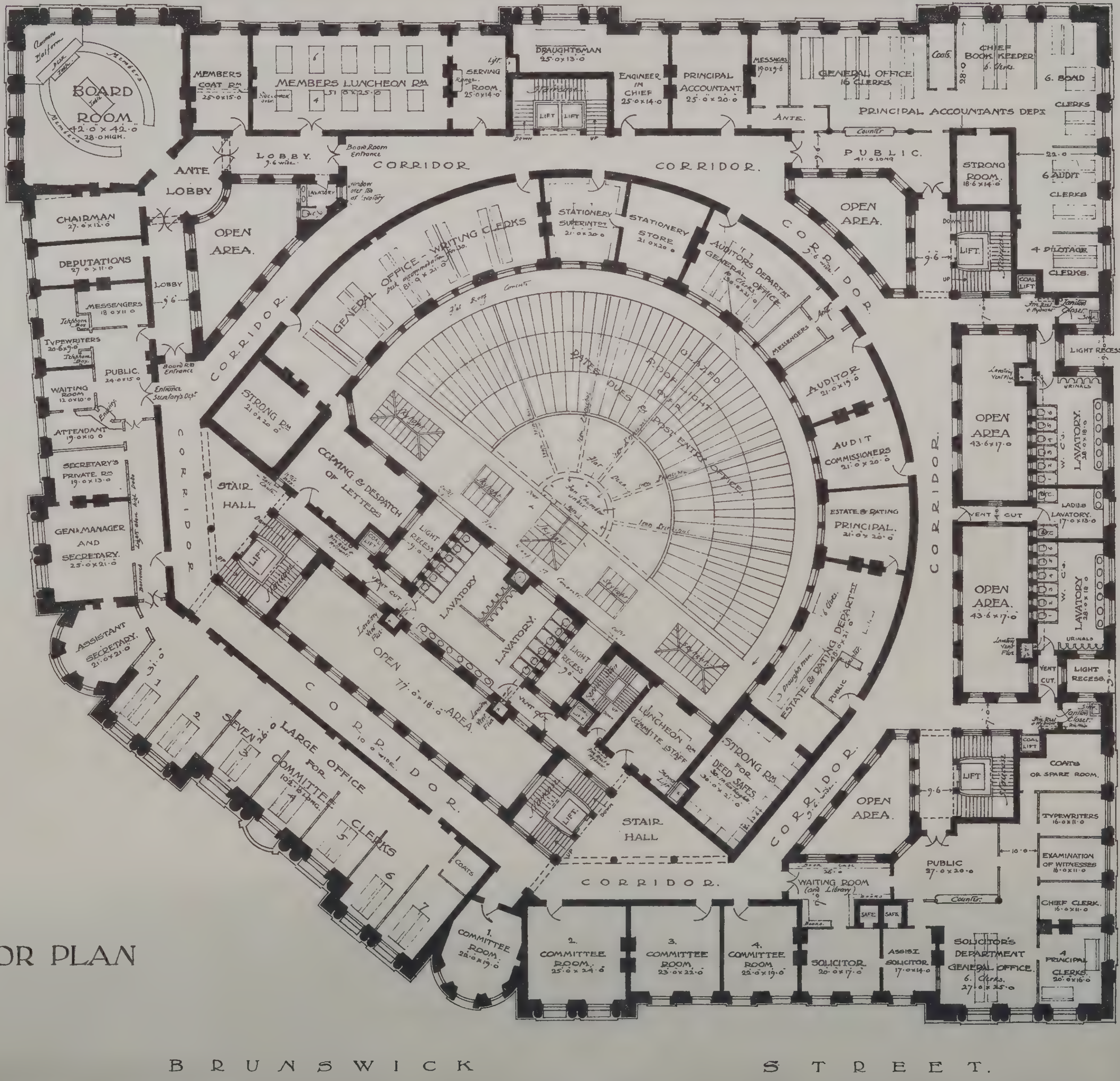
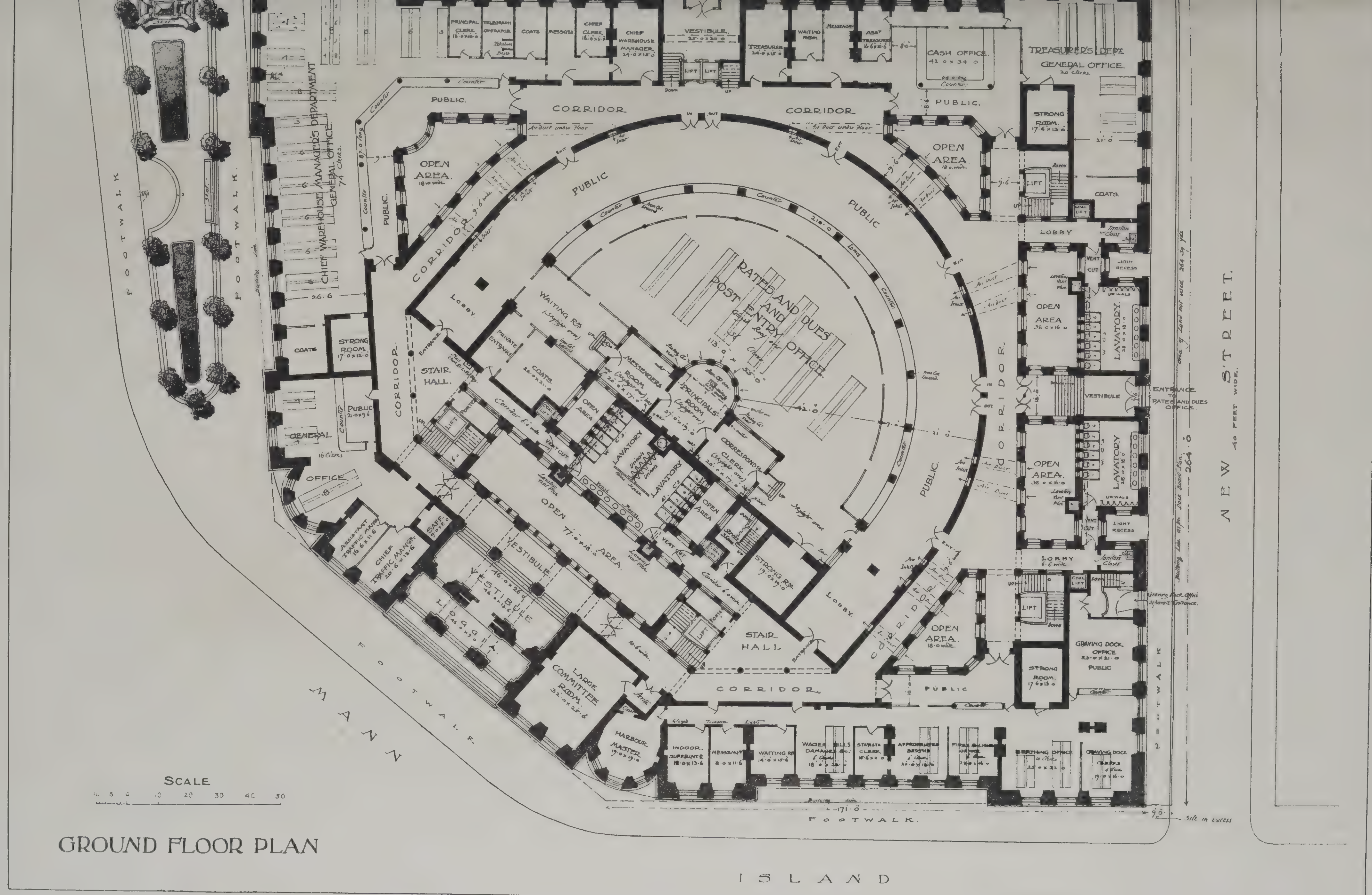

BOARD ROOM 42·0 x 42·0 28·0 HIGH.
Members
Chairman's Platform
Desk
Table
MEMBERS COAT Rm 25·0x15·0
MEMBERS LUNCHEON Rm 51·0x25·0
SERVING ROOM 25·0x14·0
Lift
Range
DRAUGHTSMAN 25·0x13·0
LIFT
LIFT
ENGINEER IN CHIEF 25·0x14·0
PRINCIPAL ACCOUNTANT 25·0x20·0
MESSAGERS 19·0x9·6
GENERAL OFFICE 16 CLERKS
Coats
CHIEF BOOK KEEPER 6 Clerks
28·0
6. BOARD CLERKS
ANTE.
PRINCIPAL ACCOUNTANTS DEPT
Counter
PUBLIC. 41·0 LONG
STRONG ROOM. 18·6x14·0
22·0
6 AUDIT CLERKS
4 PILOTAGE CLERKS.
COAL LIFT
Janitor Closet
LIGHT RECESS
LOBBY. 9·6 wide.
Board Room Entrance
CORRIDOR
CORRIDOR.
ANTE LOBBY
LAVATORY
Window over top of lavatory
CHAIRMAN 27·0x12·0
DEPUTATIONS 27·0x11·0
LOBBY
9·6
MESSENGERS 18·0x11·0
Telephone Box
TYPEWRITERS 20·6x9·0
PUBLIC. 24·0x15·0
Board Rm Entrance
Entrance Secretary's Dept
WAITING ROOM 12·0x10·0
Enquiry
ATTENDANT 19·0x10·0
SECRETARY'S PRIVATE Rm 19·0x13·0
GENl MANAGER AND SECRETARY. 25·0x21·0
OPEN AREA.
STATIONERY SUPERINTDT 21·0x20·0
STATIONERY STORE 21·0x20·0
GENERAL OFFICE – WRITING CLERKS
Desk accommodation for 30.
81·9 x 21·0
AUDITORS DEPARTMT GENERAL OFFICE. 10 Clerks. 30·0x21·0
CORRIDOR 9·6 wide
MESSENGERS
AUDITOR 21·0x19·0
AUDIT COMMISSIONERS 21·0x20·0
ESTATE & RATING PRINCIPAL. 21·0x20·0
ESTATE & RATING DEPARTMT 48·0x21·0
6 Clerks
3 Draughtsmen
PUBLIC
Counter
GLAZED ROOF LIGHT OVER
RATES DUES & POST ENTRY OFFICE.
Skylight
STRONG Rm 21·0x20·0
COMING & DESPATCH OF LETTERS
STAIR HALL
LIFT
COAL LIFT
LIGHT RECESS 9·0
LAVATORY
LAVATORY.
LIGHT RECESS 9·0
VENT CUT
OPEN 77·0x18·0 AREA.
Lavatory Vent Flue
LUNCHEON Rm COMMITTE STAFF
STRONG Rm FOR DEED SAFES. 30·0x21·0
CORRIDOR 10·0 WIDE.
ASSISTANT SECRETARY. 21·0x21·0
31·0
SEVEN 26·0 LARGE OFFICE FOR COMMITTEE CLERKS 102·0 LONG.
1
2
3
4
5
6
7
COATS
1. COMMITTEE ROOM. 22·0x19·0
2. COMMITTEE ROOM. 25·0x24·0
3. COMMITTEE ROOM 23·0x22·0
4. COMMITTEE ROOM 22·0x19·0
WAITING ROOM (and Library)
SAFE
SAFE
SOLICITOR 20·0x17·0
ASSIST SOLICITOR 17·0x14·0
SOLICITOR'S DEPARTMENT GENERAL OFFICE. 6. Clerks. 27·0x25·0
4 PRINCIPAL CLERKS 20·0x16·0
PUBLIC 27·0x20·0
Counter
10·0
CHIEF CLERK. 16·0x11·0
EXAMINATION OF WITNESSES 16·0x11·0
TYPEWRITERS 16·0x11·0
COATS OR SPARE ROOM.
OPEN AREA 43·6x17·0
OPEN AREA. 43·6x17·0
W. C's
LAVATORY. 28·0x18·0
URINALS
LADIES LAVATORY. 17·0x13·0
VENT CUT
LIGHT RECESS.
9·6
7·0
UP
DOWN
BRUNSWICK STREET.

FIRST FLOOR PLAN



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Third Premiated Design for the Liverpool Dock Offices. Plans.

By JAMES H. COOK.

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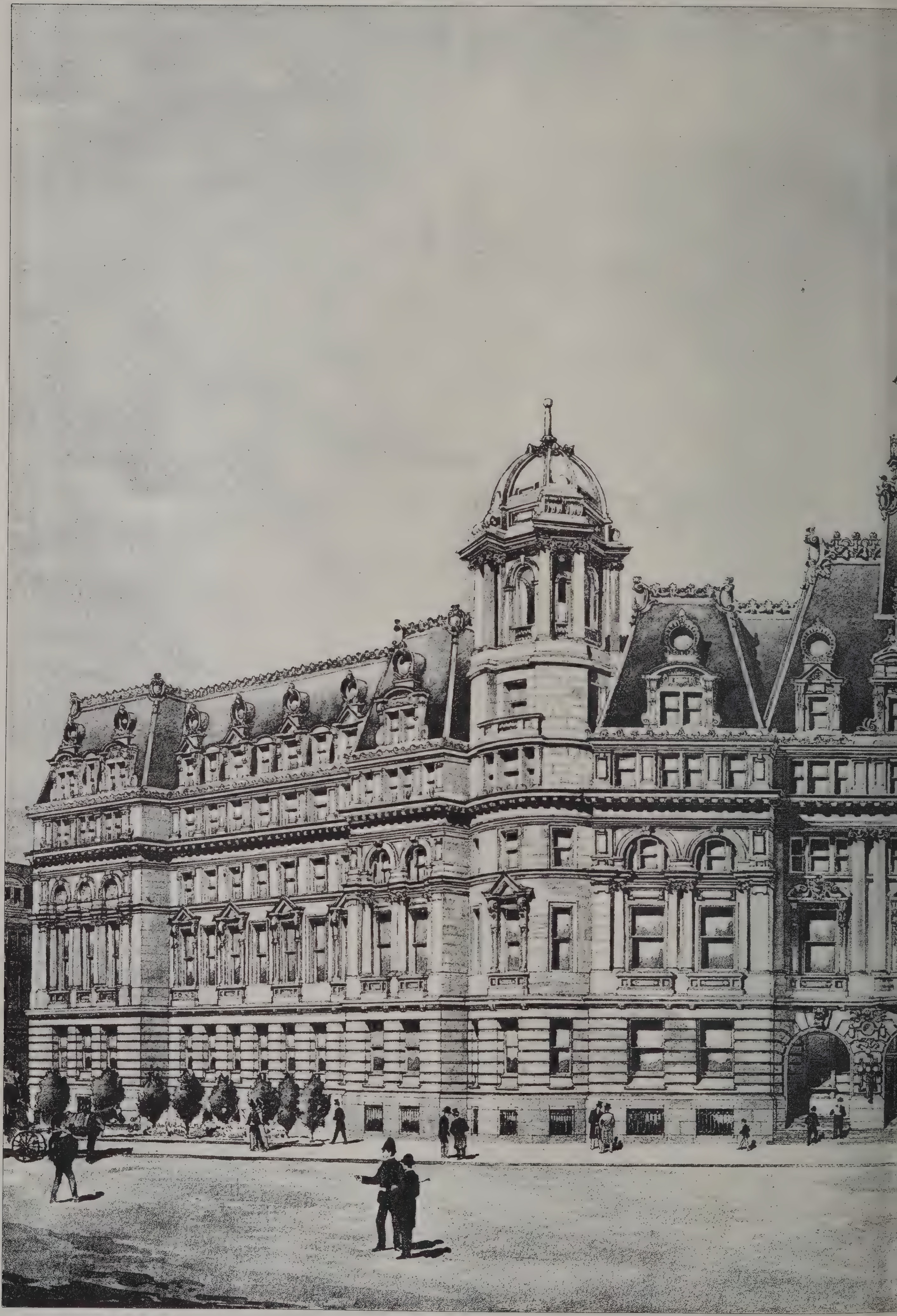
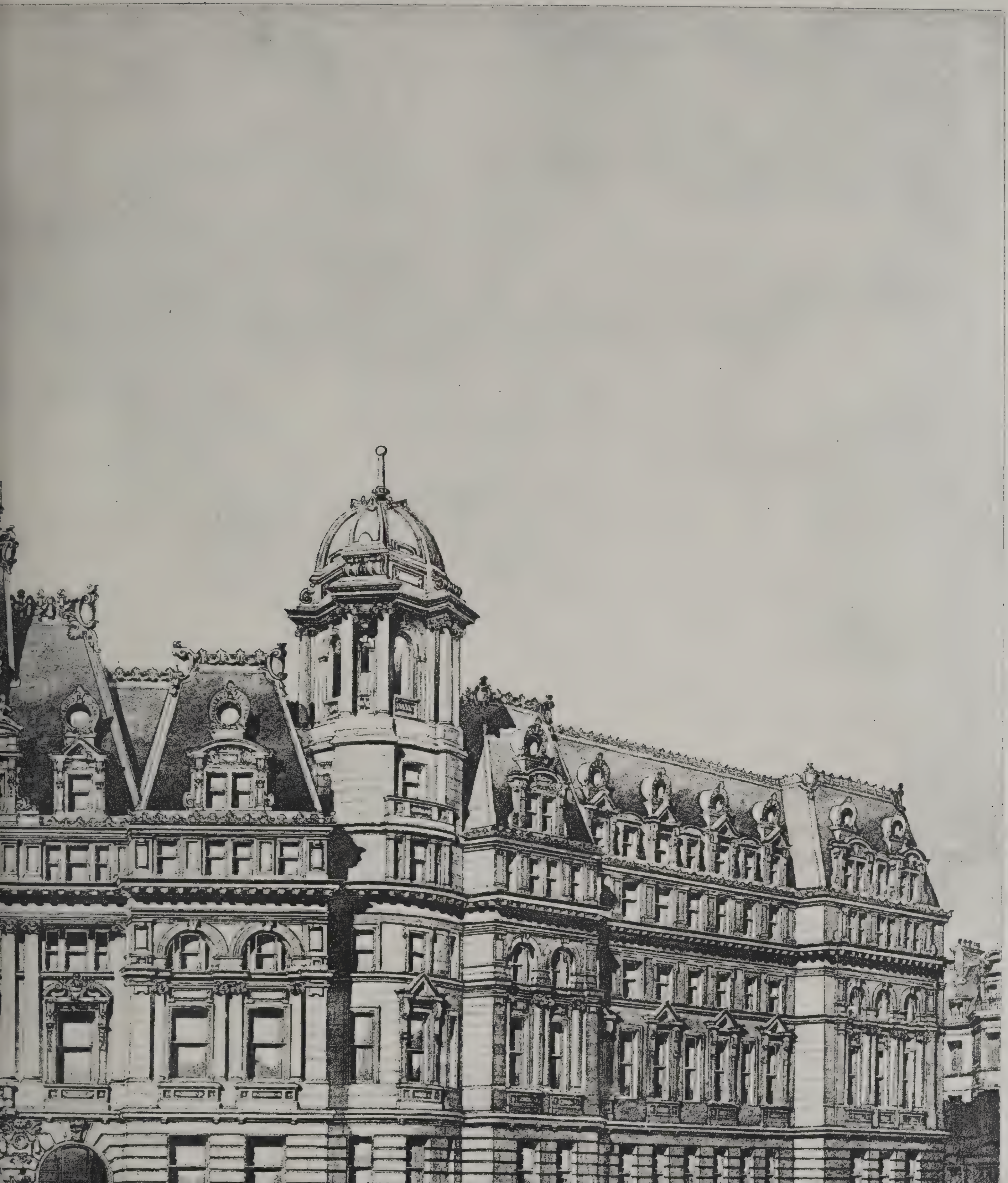


THIRD PREMIATED DESIGN FOR THE L

By JA



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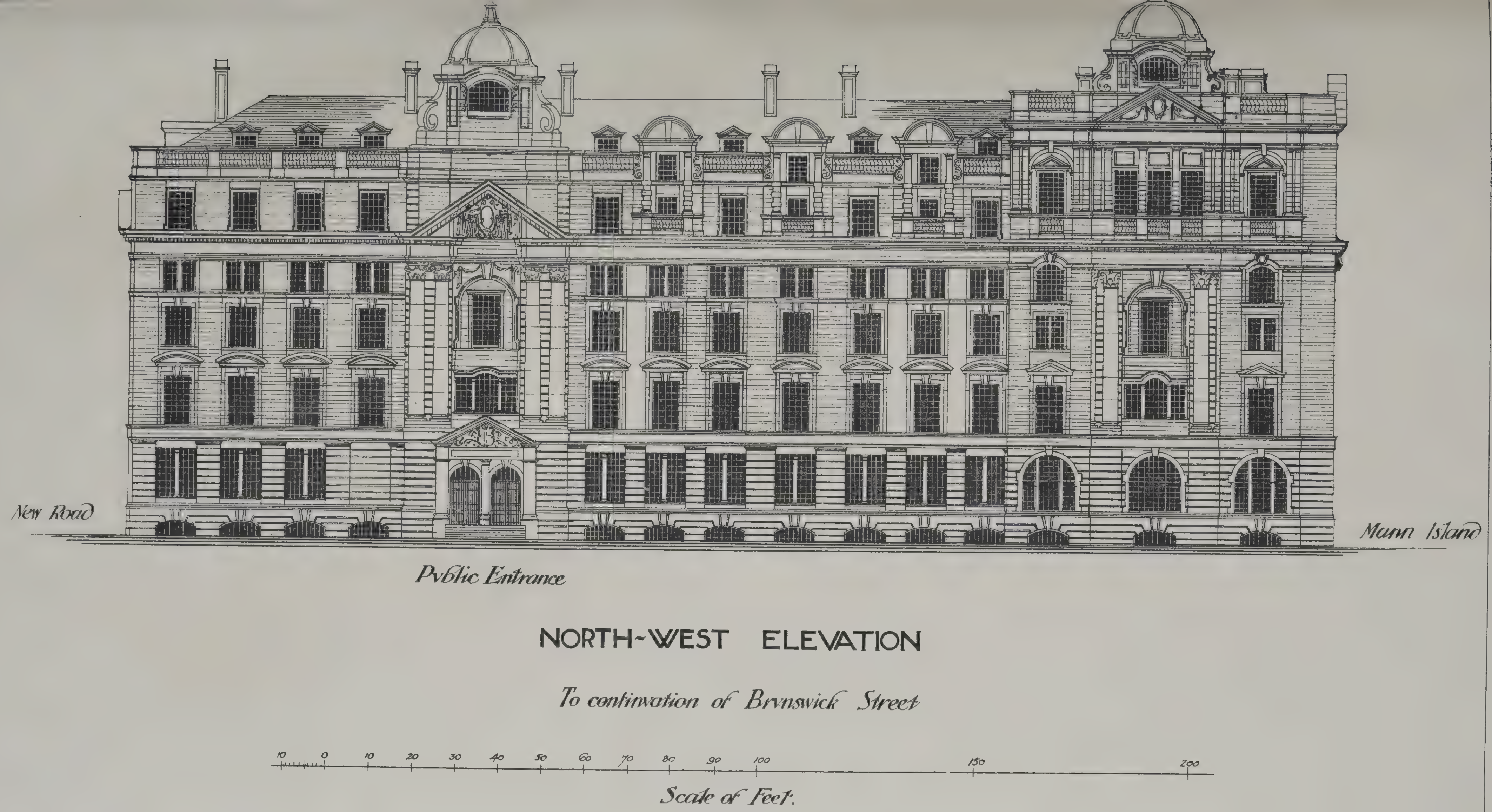
OL DOCK OFFICES. PERSPECTIVE VIEW.

COOK.



NORTH-WEST ELEVATION

To continuation of Brunswick Street

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SECOND PREMIATED DESIGN FOR THE LIVERPOOL DOCK OFFICES. ELEVATIONS.

By Messrs. WOOLFALL & ECCLES.

The Architect.

THE WEEK.

The name of the late Sir John Millais, P.R.A., has been lately heard mentioned in the Chancery Division of the High Court. If he were alive the painter would probably have been amazed, for the action to which his representatives were a party related to rights about which he was indifferent even if he were aware he possessed them. The circumstances are no doubt familiar to our readers. All Londoners know that Sir John Millais had erected for himself a large house at Kensington in a street off the High Road. Adjoining it was a rather small house, with a large and valuable plot of ground attached. The property was lately purchased by a Mr. Hosegood, with the intention of erecting flats, which seem to be in requisition in that district. Opposition was raised against the project, the trustees of Sir John Millais being among the opponents, on the ground that a higher building would affect the light to the mansion which he occupied during the greater part of his life. The history of the property had to be considered at great length in the Court, and few Chancery cases attracted so much attention. Mr. Hosegood did not care to carry on the lawsuit, and he therefore decided to dispose of the estate. But it is a remarkable fact that the litigation about the property was unknown to Messrs. Metcalf & Co., architects and surveyors, who succeeded him as owner. Plans and particulars of flats to be erected were submitted to the firm by a Mr. McManus, who was a friend of Mr. Hosegood, and who acted as his representative. As it was said there was nothing to prevent the erection of flats, and as the proceedings in the Law Courts were not known to them, Messrs. Metcalf & Co. decided to purchase the property and paid 1,000*l.* as a deposit. When a decision was given by Mr. Justice Farwell, which made the erection of flats impossible, an action was commenced by them for the rescission of the contract on the grounds of misrepresentation. The case was heard by Mr. Justice Stirling, who treated Mr. McManus as the agent of Mr. Hosegood, who thus became responsible for what was said or done. His Lordship considered the statement that there was no obstacle to the building of flats as misrepresentation, and held that if the fact were known that Sir John Millais's trustees were making claims on account of interference of light, the plaintiffs would not have agreed to give 88,000*l.* for the property. There will have to be rescission of the contract, and with such a precedent the difficulty of using the ground in a profitable manner proportioned to its value will be augmented.

The office of county architect is important, but the holder is not always adequately remunerated for his services and responsibilities. There is a notion among many people that from his position a county architect is able to secure many important commissions, and is therefore indirectly rewarded at a liberal rate. The architect for Cheshire has had for some time to perform his duties almost without payment. A special committee having considered the subject, which, it must be allowed, is not creditable to local government, the following arrangement has been adopted:—(*a*) The salary to be 500*l.* per annum. (*b*) The commission to be 5*l.* per centum, but only to be charged upon the actual expenditure on all works carried out when the contract price exceeds the sum of 1,000*l.*, such increased commission to apply to all contracts in course of completion on July 2, 1900. (*c*) The county architect to be paid a sum of 100*l.* in full satisfaction for all professional services and disbursements, including the preparation of plans prepared by him in respect of the alterations at Chester Castle and development of the Prison Estate, and the carrying out of all contracts relating thereto, and in addition to be paid such fees as have been sanctioned by the standing joint committee for preparing the plans showing the drainage of the several police stations of the county. (*d*) In addition to the duties specifically prescribed in the terms of his appointment, the county architect is to examine and report upon all sites offered to the Council, to survey and peg out such sites, to prepare plans for conveyances, leases and agreements, to prepare all extra plans and drawings required by the Home Office, Local Government Board, or other Government Department, to attend Local Government Board inquiries, to prepare plans, specifications, &c., and to superintend the carrying-out of all work on the Prison Estate at Chester Castle, and generally to perform such other duties, in addition to the above, as may from time to time be presented by the County Council or the standing joint committee, as the case may be. From the statement it will be evident that the services which will have to be rendered in return for 500*l.* are not trivial, and the office in Cheshire as elsewhere is no sinecure.

The dispute over the gold ornaments found in the North of Ireland, which were purchased by the Trustees of the British Museum, but are demanded by the Government as treasure trove in order to deposit them in the Dublin Museum, has assumed a new phase. The Secretary for Ireland stated in the House of Commons that it has recently been ascertained that the words of the patent of 10 Charles II., granted to the Irish Society for the plantation of Ulster, are large enough to vest in the Society the right to treasure trove. Under these circumstances it will be necessary to consider whether the Crown has any interest in the controversy, and whether such proceedings as may be taken should not be instituted by that Society. The Irish Society is connected in the closest way with the Corporation of London. Its origin was remarkable. In 1609 James I. entered into an agreement with the Mayor and Commonality of the City of London for establishing corporations in Derry and Coleraine. The London Companies supplied the money required, which is supposed to have amounted to about 80,000*l.* Another charter was granted by Charles II. in 1662. The estates belonging to the Irish Society were constituted the County of Londonderry. English artisans were brought over as settlers, and an effort was made to secure the seventeenth-century colonists against imitating the example of their Norman predecessors, who became more Irish than the natives. It is not usual to transfer rights in treasure trove to a corporate body or to individuals. But in the time of James I. and Charles II. so many difficulties were presented by the Irish settlements, and the London Corporation was so powerful, the charters were not likely to be drawn with that exactitude which would be found in a modern conveyance. Any rights acquired by the Irish Society are not likely to be allowed to lapse from indifference to upholding them. It might also be thought that the appearance of gold ornaments found on the Society's estates would impart extraordinary interest to the Guildhall Museum. If, however, any litigation is attempted, it cannot come to an end for a very long period, for the contest will be three-cornered, with the Government, the Irish Society and the Trustees of the British Museum as combatants. Common sense may be allowed to prevail, and the ornaments left in their present position. But the new claim shows the wisdom of the Trustees in declining to part with their purchases without an order from the highest courts in the land.

The sea front at Brighton forms so picturesque a scene, it compensates for the absence of many of the characteristics which are expected in a watering-place. Brighton cannot offer shipping to the gaze of its visitors, but there is an ample display of coast on which crowds can amuse themselves. But to keep the front in a satisfactory condition involves a large outlay. It is proposed to erect a new groyne opposite Lewes Crescent, and that work alone is estimated to cost 5,245*l.* Its length will be 440 feet. The Surveyor declares it to be of the utmost importance that the groyne should be put in hand at once, that there might be some protection for the very vulnerable portion of the foreshore before the ensuing autumnal and winter gales set in. In its present condition it was liable to very serious damage, which it would be difficult and costly to repair. Visitors to Brighton do not realise how much has had to be expended to meet the action of the tides, and it is only by figures like those we have given that the approximate cost can be estimated. All the groynes which are to be seen were not equally expensive with that which is about to be constructed, but each of them has cost a large sum, and the Town Council are to be praised for the enterprise they have shown in preserving the coast in so excellent a condition.

THE WORKMEN'S COMPENSATION ACT.

ALTHOUGH a Parliamentary return has appeared entitled "Statistics of Proceedings under the Workmen's Compensation Act, 1897, and the Employers' Liability Act, 1880, during the year 1899," it is impossible to determine the number of accidents which arise in any year and for which compensation in some form has to be given. The only materials which the Home Office can utilise are the returns which are supplied by the registrars of the county and other courts and those of the Chief Registrar of Friendly Societies. The majority of cases do not therefore come under official cognisance. There is no necessity to advise the authorities of those which are settled without the aid of the law courts, and it is fair to assume they are the most numerous.

The return of the Home Office therefore relates to cases of which there are entries in the records of the Courts. But all who have had experience of the working of the Act of 1880 or the Act of 1897 would say the entries are fairly representative of the operations which come within the scope of the two Acts. As 1899 was the first complete year when even such partial statistics could be compiled, the return has therefore more than the usual amount of novelty.

The Act of 1897 relates to six classes of employment, viz. railway, factory, mine, quarry, engineering work and building. The last is introduced in a rather irregular manner, for the description suggests the aim of Parliament was to exclude ordinary building operations from coming under the Act. The building has to exceed 30 feet in height, and is being constructed or repaired or demolished with the aid of machinery driven by steam, water or other mechanical power. We need hardly say the application of the Act to building has given trouble to the Court of Appeal. In spite of the difficulties, however, there were during last year 159 building cases under the Workmen's Compensation Act brought under the notice of the Courts. The total number under the six heads of employment was 1,347, about one-half, or 686, relating to factories.

Here it may be remarked that of the 1,347 cases, 828 were heard by county court or other judges, 98 were sent to arbitration, 73 were settled by acceptance of money paid into Court, and 348 were otherwise disposed of. The amount of compensation awarded was by payment in a lump sum, 40,907*l.* 16*s.* 11*d.*, and the weekly payments amount to 205*l.* 15*s.* 9½*d.* In 506 cases solicitors' costs were awarded, and the amount was 5,932*l.* 8*s.* 5*d.* That may strike a layman as a large sum for lawyers to receive in connection with cases in which the plaintiffs are of a humble class; but it should be remembered that the Act is intricate, and that many of the words and phrases employed require serious study. There are several interpretations of the meaning of the words "factory," "building," "accident," "employment," "dependants," &c., and as for "arising out of and in the course of employment," the phrase affords sufficient matter to test the acumen of embryo judges. It may be mentioned that more than one-half of the amount expended in law costs arose out of factory cases, the sum given in the return being 3,142*l.*

If we take the 159 cases in which builders and building workmen were concerned we find that 96 were heard before judges, 19 before arbitrators, 5 were settled by acceptance of money lodged in Court, and 39 were either withdrawn, settled out of Court, adjourned *sine die*, &c. In 87 cases the result was favourable to the applicant, *i.e.* the workmen or their representatives, and in 33 cases the respondents or contractors were successful. Compensation in a lump sum, amounting in all to 4,517*l.* 19*s.* 1*d.*, was paid in 36 cases, and weekly payments which came to 31*l.* 1*s.* 1*d.* From the number of the actions arising out of accidents on building works which were reported in the newspapers, many people have concluded that the operations were especially dangerous, or that builders are especially indifferent to providing security to protect their workmen. The figures we have given will suggest the extent of the injuries which have occurred, and for which compensation has had to be paid. Thirty-nine deaths out of 159 cases was no doubt a large proportion, but in railways the proportion was 58 to 104, in mines 105 to 233, in quarries 21 to 51, and in engineering work 27 to 114. Unfortunately there were also 63 cases of "total incapacity" arising from accidents on buildings.

The difficulty of applying the Act will be suggested by the results of the appeals to the High Court. There were six appeals in connection with building cases. Three were allowed, two were dismissed, and one was "otherwise disposed of." We thus have an almost equal division of judicial opinion. It is right to remark that the six appeals were by employers. Under the Employers' Liability Act, out of seven appeals by employers two were allowed and four dismissed.

The figures we have given are abstracted from the statistics for England and Wales. Let us now turn to the North. We have no wish to underrate the value of the lives or limbs of English workmen employed on buildings, but it is unquestionable that the Workmen's Compensation Act is administered more economically in Scotland than in England and Wales. As we have seen, there were 159 English cases brought into Court, and 87 of these were adjudged as entitled to compensation, or over one-half. Of the 44 Scottish cases no more than 7 were compensated. Out of the 39 Englishmen killed the representatives of 21 were considered entitled to compensation, and the sum of 3,958*l.* was awarded, or nearly 178*l.* in each case. Seven workmen in Scotland lost their lives, but compensation was allowed to the representatives of only two. The total sum given was 191*l.*, or 95*l.* 10*s.* each. In Scotland 29 workmen commenced actions for damages for partial incapacity. Two were awarded 18*l.* 19*s.* between them and one a weekly allowance of 12*s.* 7*d.* Two men for total incapacity received weekly 8*s.* each. Finally, the costs of the Scottish solicitors amounted to 45*l.* 16*s.* for 15 cases, or, say, 3*l.* per case, while the English costs for 59 cases were 647*l.*, or 11*l.* per case. It is worth noting that in the five other employments Scotland displays no less economy in compensation. The fact should also be recorded that of the three appeals in building cases to the Court of Session, two by workmen were dismissed and the single appeal of an employer was allowed.

The returns from Ireland are remarkable. In the section of building there is one entry of the death of a workman, but the case was settled out of Court. Four claims were made for partial incapacity and all were rejected. Taking the six varieties of employment as a whole, 59 cases were commenced, but only in 24 was compensation awarded. For seven lives sums amounting to 736*l.* 10*s.* were allowed. The costs in 16 cases were 82*l.* 8*s.* 9*d.*, or about 5*l.* each.

It is in one way fortunate that the Scottish cases produce such moderate results, for, according to authorities, if population be taken as a basis, there is nearly twice as much litigation in Scotland as in England. It is also found that the English workman is more successful than the Scottish before the Courts. Out of 1,347 cases in the county courts in England, the workman obtained definite judgment in his favour in 56 per cent. and the employer in 18 per cent. In Scotland in 292 cases the workman obtained judgment in his favour in 34 per cent. and the employer in 28 per cent. It is also remarkable that under the Employers' Liability Act the number of cases in England was 505, with judgment for the plaintiff in 153, or 30 per cent., while in Scotland the number of cases was 145, with judgment for the pursuer, *i.e.* the workman, in 5, or ·3 per cent. It is manifest that in Scotland the employer has less reason to fear the operation of the Workmen's Compensation Act than in England. The official explanation given is as follows:—"The extremely small number of judgments in favour of the pursuer in Scotland is to be accounted for in part by the extensive use of the Scotch procedure, by which cases under the Act are 'appealed for trial by jury' after proof has been allowed in the Sheriff Court, a procedure which is capable of being so used as in many cases to force a settlement on the employer." In the Glasgow district alone thirty-six cases were so "appealed," and it is believed that had these cases been contested in the Sheriff Court there would probably have been judgment for the defendant in at least twenty-five of them.

As we have said, the deductions from the statistics must be restricted. So many cases are settled out of the Courts, unless there is a clue to them the real value of the Act cannot be determined. The insurance companies could no doubt assist the Government by preparing returns of the business transacted under the Workmen's Compensation Act. But many objections can be adduced against that arrangement. The authorities maintain, however, that the estimate which was given before the Act came into operation, that 150,000 accidents a year would have to be taken into account, is not exaggerated, and it is now considered that the number was underrated.

METHODS OF ENCOURAGING THE USE OF ELECTRICITY.

In a recent issue the question of electric motors and their maintenance was considered in connection with a contribution on the subject, and it is now proposed to deal with the encouragement of a general use of electricity for lighting, chiefly with more especial reference to two papers brought before the same Convention.

Foremost amongst the inducements necessary to convince the public of the benefits of electricity supply may be placed reliability. Fortunately it may be said of the majority of electricity supply undertakings that the supply is really reliable, and that no hesitation need be felt in removing gas fittings or in disposing of oil lamps. The same cannot be said of some of the older undertakings even at the present day; but it may be assumed that every reasonably constructed modern works is now sufficiently reliable to command the confidence of the public. There is little doubt that a large part of the recent enormous advance in the use of electricity is attributable to increased reliability.

The greatest inducement is low cost, and there is no doubt that the effect of reduced prices in general has been enormous. Formerly 8*d.* per unit was the usual charge, while now 5*d.* per unit is a fair average charge for electricity. The system of charging for electricity has undoubtedly much to do with its popularity, and the most successful of them is that known as the Maximum Demand system, first adopted at Brighton, and in one form or other this is used in a great many of the works in the United Kingdom. The "Discount" on quantity system has not been successful, and now it is really the small consumers who often obtain most benefit.

The subject of methods of charging for electricity has already been gone into thoroughly in these columns, so we will pass on to other inducements offered to consumers.

Amongst what might be termed secondary inducements may be named the following:—(1) Free wiring, or hire purchase of wiring and fittings, motors, lamps and other apparatus, (2) prepayment meters, (3) liberal policy of laying mains, (4) free meters, (5) service connection without charge, (6) free supply of lamps.

1. *Free or Hire Purchase Wiring, Fittings, &c.*—Considerable attention has been given during the last few years to methods of reducing the high first cost of wiring and fittings for electric lighting and of minimising the effect of such high cost upon the consumer. In recent years there has been a great reduction in the first cost of installations, while the systems of wiring in use have been considerably improved and rendered more mechanical. It may be fairly said that the cost has been reduced from 40 to 50 per cent., and the lasting qualities of the work have been increased by 100 per cent. at least. This great improvement has also been of late accompanied by a successful attempt to make even the lower first cost felt much less by the consumer. A so-called "free wiring" company was formed some years ago, the main object of which was to undertake the supply and fixing of electric wiring and fittings for consumers, free of initial expense, the company depending for their revenue upon 1*d.* per unit of electricity used through those fittings and wires, which is collected over and above the ordinary charge by the supply authority with whom arrangements are made. A minimum charge of usually 10 per cent. of the cost of installation is made. The system has been the means of considerable benefit in obtaining new consumers for the electric supply works, but it is obvious that such a system, based upon the consumption of electricity, must press hardly upon consumers who use electricity for any considerable time, and be cheap for the short hour consumers, which latter are unremunerative.

There have been several modifications of this system, one of which is that the consumer is charged nothing extra per unit on account of the wiring, &c., the supply authority bearing the cost; and, again, the supply authority sometimes bears half the cost and the consumer the other half. Such arrangements are, however, not generally approved, because they interfere with the business of the ordinary wiring contractor, who has in the past proved of use to the supply authority as a canvasser for new consumers; and also, of course, those consumers who pay or have paid for their wiring have to provide, or help to provide, for those who have the "free wiring," as the supply authority has to keep up the general price to meet the payments to the "free wiring company." Another modification which has not very much in its favour is that of making no additional charge for the wiring, but where the maximum demand system of charging is in force the consumer is deprived of the discount for long use. This does not appear good policy, as it is again a premium on short hour and unprofitable consumers. The whole system of charging for wiring on a basis of the units used is, in fact, not correct in any form.

Another system which is really "free wiring" is that of wiring six lights or so for any consumer in such positions of the premises where they will be most required, free of all charge. This system has proved a great success and is likely to extend, and although it may be slightly unfair to the old consumers, it is not expensive, and is so arranged that all persons can benefit by it. As usually carried out, however, it presses hardly on wiring contractors who do not happen to be the ones selected by the supply authority to do the work, but even this difficulty may be overcome partially by placing the work up to public tender, and wholly by the supply authorities arranging to pay a fixed sum for the consumer towards the cost of wiring any house, providing not less than six (say) lights are installed in those positions where they will be used frequently.

Passing from the free and so-called free-wiring systems, we must consider the various hire and hire-purchase systems. A simple hire system has been adopted by the Shoreditch Vestry for their artisans' dwellings, by which a small sum is added to the rent of the rooms to cover the use of the fittings and also the current supplied. The current is switched on from dusk till midnight, and from 5 A.M. until daylight in the winter. Of course, in this case there is little trouble, as the dwellings are the property of the vestry.

The hire-purchase system which has met with considerable favour is that adopted by the Plymouth Corporation.

In this system the Corporation does not undertake wiring, but any contractor on obtaining a customer gives a price in the ordinary way. If the customer desires hire purchase the Corporation is approached, and the contractor is paid by them the amount of the contract, less 5 per cent. cash discount.

The customer pays the contract price to the Corporation in eight quarterly instalments, the first in the form of a deposit on application. This installation must be carried out to the approval of the Corporation, and is maintained by the consumer. It is evident that under this system the consumer obtains very good terms, and, further, the operations of the ordinary wiring contractor are not interfered with, but are in fact encouraged. This system is thus absolutely fair to all parties. A very usual system for hire-purchase is one in which the consumer pays the contract price in any convenient number of instalments, and also interest on the outstanding portions at 5 per cent. per annum. This, combined with the arrangement by which any contractor may do the work, is excellent.

Other systems have been proposed, usually in connection with special wiring companies, which are hardly so simple or apparently so favourable to the consumer. A system proposed for Wigan is that the prime cost to the wiring company, plus 15 per cent. for standing charges, plus 20 per cent. trade profit, plus 2½ per cent. for inspection by the supply authorities is charged to the consumer, to be paid 10 per cent. on the completion of the work, and balance in sixteen quarterly payments, plus 5 per cent. per annum on unpaid portions.

In all these systems of free wiring and hire purchase a difficulty has to be met, that of dealing with a tenant under a short term of agreement. This difficulty is overcome by making the landlord a party to the agreement, whereby he admits the ownership of the wiring by the supply authority until it is fully paid for. In that case a change of tenancy does not affect the authorities unless the new tenant refuses to continue the payments. If he wishes to use electric light he either has to buy the wiring or fittings at a reasonable price or put up others of his own. He as a tenant is not likely to adopt the latter course as they would become "landlord's fixtures."

The system of hire and hire purchase has been extended to consuming devices which are in themselves often rather expensive, such as electric motors, arc lamps, heating and cooking apparatus. There are two scales of charges, one for hire only, and the other for hire purchase on a three years' system. The charges usually also include the cost of maintenance of the plant, excluding, of course, breakage through careless or rough usage. This question was dealt with in detail in a recent issue, with special reference to electric motors.

2. *Prepayment Meters.*—In dealing with the poorer classes, amongst which the use of electricity is rapidly extending, the adoption of prepayment meters is of great assistance. These meters are in many cases much cheaper than those of the ordinary type, while they are appreciated by the consumers, the payments being made in a way which suits their habits. They do not like to pay large accounts, and the meter also is not a subject of dispute. There is no danger of bad debts being contracted, and the cost of collection of accounts is obviated. It, however, appears a mistake to charge more than the standard rate for electricity passed through prepayment meters, because even on the question of justice, apart from expediency, as the consumer pays cash down he is entitled rather to a discount.

3. *Liberal Policy in Laying Down Mains.*—It has been found that a liberal and judicious policy of laying extra mains does much to create a demand. It is admittedly misleading to rely on a canvass, as very many more consumers are obtained than will promise to take a supply on a canvass. With a popular system of charging and by the help of the various schemes here mentioned, almost any main, if in a reasonably populous district, will pay.

4. *Free Meters.*—It has been repeatedly pointed out that it does not seem correct for a consumer to be compelled to pay extra for the privilege of having the electricity measured for the convenience of the supply authority in submitting the account, and the meter rental is looked upon by many as an imposition. It would not be tolerated if a customer had to pay extra for having his purchases weighed. In almost every other business the supplier is bound by law to keep proper measuring and weighing apparatus for the goods sold by him. The abolition of meter rents acts in just the same manner as in the case of a charge for a service connection to enable a supply to be received.

5. *Service Connections without Charge.*—Much friction is caused between the supply authority and the consumers by the charge for a service connection which is made. The charge is in itself usually about 1*s.* per light connected, but it does not cover one-tenth of the cost of connecting as a rule. Many engineers advocate the abolition of this inadequate and rather irritating charge, and results have shown that by connecting consumers' wiring to the mains without cost considerable inducement is caused to consumers to take a supply.

6. *Free Supply of Lamps.*—A system of supplying lamps to consumers has been adopted at Bradford. The basis of discount is as follows:—60 units entitles the consumer to one 8 or 16 candle-power lamp, 120 units to two 8 or 16 candle-power lamps or one of 32 candle-power, 240 units to four 8 or 16 candle-power or two 32 candle-power lamps, and so on in proportion. This discount is not given unless the account is paid within two months of the termination of the half-year. All lamps are tested, but they are not guaranteed.

It has been objected that all such schemes which interfere with trade are bad, and that to give discounts in the form of supplying lamps is practically increasing the price of electricity and supplying lamps in addition to electricity, as, of course, the lamp account is an extra works cost.

There is some benefit derived, perhaps, in the fact that the lamps may be rather superior to those usually purchased by the consumer, but there is a strong feeling that such interference is hardly justified by the results. In the system at Bradford the consumer must either take the lamps or lose the discount, so the local lamp dealer naturally loses his business.

SIR J. N. DOUGLASS.*

THE construction of lighthouses is often most hazardous to those employed on the work. On that account the reports of Smeaton and the Stevensons are fascinating, for they record hair-breadth 'scapes which are unmatched in any other variety of adventure. About the works carried out by the Trinity House Corporation little, however, is known. One reason for the general indifference is the belief that the Corporation resembles the majority of Government departments, and, having limitless resources, construction in any form is easily accomplished. That fallacy may be removed by such a work as the biography of Sir James Douglass, who was engaged under the Trinity House for over forty years, and which should afford materials for an interesting chapter in engineering history. But in that case the biography should be accompanied by an abundance of plans to illustrate the character of the buildings and apparatus, and to suggest the peculiarities which it was necessary to adopt in order to enable the masonry to resist the utmost power of waves and storms. But apart from its historical use a biography of Sir James Douglass is worth presenting as an example of a man who was as remarkable for courage and energy as for inventive skill and organising power. There is, besides, another reason which almost makes it a necessity. An expert, whether he be architect, engineer, chemist, physician or surveyor, in an official department, is generally allowed to be in intelligence far above the men who co-operate with him. Officers holding high rank are consequently prone to have a belief in their own infallibility and the perfection of their powers, as if they were free from all the weaknesses of the multitude of men. But they are not made more attractive to the world through that assumption. As Shakespeare says:—

> These men,
> Carrying, I say, the stamp of one defect,
> Being Nature's livery, or Fortune's star,
> Their virtues else—be they as pure as grace,
> As infinite as man may undergo—
> Shall in the general censure take corruption
> From that particular fault.

It was the fate of Sir James Douglass to be stained in that way, and it may be doubted whether all the waves which dash against his Eddystone Lighthouse are sufficient to cleanse his reputation before the public, especially in respect of one transaction. We refer to the part he took in the dispute about the relative merits of gas and oil as an illuminant for lighthouses. It will be remembered that the late John Tyndall was the scientific adviser to Trinity House. As the successor and imitator of Faraday he was regardless about selling his knowledge for gold. He could easily have enriched himself if he confided his discoveries to manufacturers instead of to the public, who read his books and listened to his lectures. The principal and most secure part of his income was derived from the salary he was paid by the Trinity House Corporation. But he preferred to abandon it rather than be silent on a subject which he considered affected the lives of "those who go down to the sea in ships." Mr. Williams, in the biography of Douglass which has just appeared, explains Tyndall's action in a pitying way, as if it arose from an excess of emotion, and was therefore weakness. "He had," we are told, "for a considerable time espoused, with all the enthusiasm of his Celtic nature, the cause of the inventor of the gas system, Mr. John R. Wigham, whom he looked on as a clever, meritorious inventor who was not having fair play, and, as regards this particular investigation, objected to Sir James Douglass, who had himself invented oil burners, being allowed practically to sit in judgment on a rival's scheme." Tyndall was born in Ireland, and his features bore the Celtic stamp, but he was no more of a Celt in mind than was Jonathan Swift, and it is unfair to suggest that he was the advocate of a man rather than of a system. The inventor has undoubtedly spent much of his life in Ireland, but we believe that he is not an Irishman by birth, and he has never displayed what are known as Irish characteristics. The interpretation put on Douglass's conduct at the time was that he was following official precedents by endeavouring to nullify a commission of inquiry, and in his case his action was supposed to be aggravated by his possessing the rights of a patentee in several varieties of apparatus for burning oil in lanterns. It is right, however, to make it more generally known that, although he took out patents, Sir James allowed them to be used in English and other lighthouses without the payment of royalties. In that way his inventions, instead of being profitable, were a heavy tax on his purse. If it were only to explain his action in the important gas *versus* oil controversy, a biography of Sir James Douglass was desirable.

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* *Life of Sir James Nicholas Douglass, F.R.S.* Formerly Engineer-in-Chief to the Trinity House. By Thomas Williams. Longmans, Green & Co.

Whether Fate had destined James Douglass to be a lighthouse engineer must be left to the reader's imagination, but it will be allowed there could hardly be a better preparation for the duties than that through which he passed. His father was one of those big Northumbrians with whom mechanical science is an instinct. After some vicissitudes he was engaged as a constructive engineer by the Trinity House Corporation, and he rose to be superintending engineer. In those days the engineer-in-chief to the Corporation was James Walker, whose partner was the father of the late William Burges, whom he survived. Walker and Burges were allowed to have a monopoly of all works of which water, and especially sea water, could be considered one of the enemies. The business of Nicholas Douglass was to realise Walker's plans, and he was allowed to have the co-operation of his son James, and later of another son William, who is now engineer-in-chief to the Commissioners of Irish Lights. In 1847 Nicholas Douglass was entrusted with the erection of a lighthouse on the Bishop Rock, near the Scilly Isles. At that time iron was beginning to supplant stone in many classes of construction, and it was decided to try the experiment of a lighthouse in which cast and wrought-iron should be employed. The structure was raised to the height of the lantern, but in a storm in 1850 it was washed away as easily as if it were a child's toy. It was, therefore, decided to erect its successor with the old-fashioned granite. In the new work James Douglass took the principal share. The rock was too limited in area to allow the men to live on it, and the neighbouring island of Rosevear was utilised for habitations. According to Mr. Williams, "The granite blocks for the Bishop Tower were supplied in a rough or scappled state from Carnsea and Lamorna quarries, Cornwall. They were dressed in a work-yard at St. Mary's, and conveyed to the rock during the early stages of the erecting operations by the *Billow* sailing tender, and afterwards in barges towed by a steam-tug (the *Bishop*), which was named after the station." The construction was attended with considerable danger, of which an account is given in Mr. Williams's pages. Before the lighthouse was completed James Douglass, wishing to extend his knowledge, became manager of railway carriage works, his brother taking his place as engineer on Bishop Rock. But there was too much routine in the new work to satisfy so adventurous a man, and it was not long before James returned to Scilly. The Trinity House were glad to utilise his services again.

In 1856 he was appointed resident engineer for the new lighthouse on the Smalls, a group of rocks about 18 miles from Milford Haven. A fantastic structure had stood there for a long time, but to purchase it the enormous sum of 170,468*l.* had to be counted out from Trinity House. This may now seem to indicate an incredible state of things, but no less regard for the rights of property is daily seen in the purchase of slums. It should be also remembered that the owners of lighthouses formed an important body. A select committee of the House of Commons reported in 1834 that two years previously the sum of 79,676*l.* was collected as tolls by private individuals owning lighthouses, the Eddystone being one, and as the expenses were put down at 19,000*l.*, there was a clear surplus of 60,000*l.* All the lighthouses which were then owned by Trinity House only produced 83,041*l.*, but as the expenses of maintenance were nearly 43,000*l.*, the surplus was only 40,467*l.* In those days private lighthouses were 50 per cent. more profitable than those belonging to Trinity House. The new granite lighthouse on the Smalls required five years for construction, and cost 50,125*l.* The vicissitudes which had to be endured were enough to test the strongest will, but the moral influence of James Douglass, and his insistence on the privilege of taking the most difficult post, gave courage to all who were employed under him. When it was constructed he was compelled to paint the granite tower in red and white bands, for a Royal Commission had decided that grey granite was the most unsuitable material as regards colour that could be employed for any structure that was to stand out against the sea.

His next work was the erection of a lighthouse on the Wolf Rock, between Land's End and the Scilly Isles. Before he had completed it, owing to the death of James Walker, he was selected to be the chief engineer to the Corporation of Trinity House. He assumed his new duties in 1863, being then in his thirty-seventh year. His official life is described at length by Mr. Williams. One of the works which had to be undertaken was the new Eddystone Lighthouse. Douglass departed from the contour adopted by Smeaton in the original work, for instead of a curved line which started from the base, and which was said to have been derived from the oak tree, the lower part of the modern lighthouse is vertical. The reason given for the change was that the waves strike with more force at the base, and it is right that the form should be adopted which is most suited to resist the impact. Smeaton considered that the strength of his lighthouse was largely owing to his method of dovetailing the stones. The joints in the new structure are no less locked, but the arrangement is different, as will be evident from the following comparison :—

> In Smeaton's tower there were 636 stone joggles, 1,800 oak trenails, 4,570 pairs of oak wedges, 8 circular floor chains and 226 iron cramps. In modern rock towers scarcely any such appliances are now used, though composition metal bolts, slit and wedged at both ends, are employed in fastening down the foundation courses. The present system of dovetailing the stones one into the other is, indeed, so complete, and the modern quick-setting cements possess such an advantage for hydraulic work over the mixture of blue lias and terro-puzzuolana limes used for the blocks of Smeaton's lighthouse, that, except where the courses come in contact with the rock, no necessity exists for separate joggling and trenailing. Smeaton's method of bonding was, like every other mechanical arrangement which his skilful mind devised or adapted, characterised by extreme ingenuity, and was the first successful application to masonry of a process which had previously been almost exclusively confined to carpentry. . . . The method adopted in the case of the present tower, as well as in that of every rock lighthouse erected by the Trinity House since the "Hanois" (completed in 1863), is the invention of Mr. Nicholas Douglass. It consists in having a raised dovetailed band 3 inches in height on the top bed and one end joint of each stone. A corresponding dovetailed recess is cut in the bottom bed and end joint of the adjoining stones, with just sufficient clearance for the raised band to enter it freely in setting. The work, when thus put together and set in Portland cement, is nearly as homogeneous as solid granite.

On the completion of the new Eddystone Lighthouse James Douglass was knighted. Another work which he was called upon to plan was the casing of the lighthouse on the Bishop Rock, the first structure with which Sir James was associated. Expedients such as iron ties were tried, but it was found the mass of the building was insufficient and was in danger of yielding to the force of the ocean. The plant which had been employed at the Eddystone Lighthouse was utilised for the new work, in which 3,220 tons of granite were used. According to Mr. Williams, "The dressing back of the surface of the old structure to receive the outer stones was a very tedious operation, and at the lower levels of the work the men engaged in this process, and afterwards in fitting the new blocks into the old ones, were often in danger of being washed off the staging by the heavy seas that would, unexpectedly, break upon the tower and submerge them." The casing was nearly as expensive as the original construction.

The list of works which had to be carried out during

Sir James Douglass's tenure of office is long and important. His labour was not confined to masonry in difficult positions; his attention was also occupied with the essential problem of illumination. In all things he undertook he endeavoured to be thorough, and consequently he acquired a dexterity in dealing with optical apparatus which used to amaze practical workmen. Indeed, it may be said that there was no element or detail connected with lighthouses of which he was not a master. No doubt under other circumstances he might have been able to display more versatility. But we must consider him as a specialist, and as such he stands in the very front rank. It is true the branch of engineering he followed was of limited extent, and it is possible future engineers for the Corporation of Trinity House will not have similar opportunities to display their courage and skill, but everyone will allow that among the numerous varieties of construction there is not one which is of more importance to the world than lighthouse construction, and a man of genius is justified in devoting his life to it alone.

The biography of Sir James Douglass deserves to be popular. He was an admirable example of the modern English engineer. His life could be imitated in all kinds of callings, for the main principle of it was the doing of one's work with all the might which nature provides. Duty with him was omnipotent, and when the occasion required he was quite ready to sacrifice his life so long as the task he had undertaken was accomplished. Among English worthies Sir James Douglass must hold a place, although from the circumstances of his office he was almost unknown to the majority of his contemporaries, and by many was misjudged.

PRINCIPLES OF CONSTRUCTION FOR ARCHITECTURAL STUDENTS.

By E. Wyndham Tarn, M.A.

(*Continued from last week.*)

VI. *Strength of Materials.*

All solid bodies offer some sort of resistance to any stress that may be brought to bear upon them, and which has a tendency to produce a change in their form. The materials which we use in the erection of buildings are liable to be subjected to either a pulling or tensile stress, a compressing or crushing stress, or to a cross or transverse stress, the last being generally a compound of the two former.

When a mass of material, such as a rod or beam, is subjected to a tensile stress or to a crushing stress acting in the direction of its length, it will be either stretched or shortened to an amount depending on the force applied, and also proportional to the original length. The elasticity of a body is that property which enables it to return to its original shape after being compressed or stretched by an applied force, as soon as that force is removed. If the body does not recover its original form, then it has been overstrained and its elasticity impaired; and it is the object of experiments on the strength of materials to ascertain the amount of stress to which a body can be subjected without injury to its elasticity.

When a body has been subjected to a compressive or a stretching force which has not impaired its elasticity, although its length may have been temporarily diminished or increased, the ratio of the original length to the amount of shortening or elongation, multiplied by the load causing the change of length, is found to be a constant quantity for all amounts of stress in the same material, and this is called the "modulus of elasticity," for which the letter E is used, and its value is found by experiment and expressed in pounds or tons for one square inch of section of all kinds of building materials. In most materials the value of E is the same, whether they are subjected to a compressive or a stretching stress, provided the elasticity of the material remains unimpaired by the stress, which must always be the case in materials employed for building purposes.

When a beam is subjected to a transverse stress a certain deflexion or bending is produced, and the modulus of transverse elasticity is found experimentally by observing the deflexion produced by a known weight, and is not always the same as the value of E found for tensile and compressive stress.

The modulus E being known for any material for one square inch of section, we can find the extension or compression that will be produced by a given load in a mass of that material of any sectional area, by dividing the product of the load into the length of the body by the product of E into the area of section in square inches. If the original length is expressed in feet the extension or compression will be found in a fraction of a foot.

The amount of weight per square inch of section which will crush or tear asunder a body of any shape has been found experimentally for all kinds of building materials, and we have only to multiply this by the number of square inches in the section of the body in order to find the load which would destroy its power of resistance, and this load is termed its ultimate strength. In practice, however, no material must ever be subjected to anything like an approach to ultimate strength. If steel or wrought-iron are used the safe load must not exceed one-third of the ultimate; in the case of cast-iron it must not exceed one-fourth; in timber one-sixth, and in stone or brick it should not be more than one-eighth of the ultimate strength.

Let us apply the above rule to a bar of wrought-iron 10 feet long and 3 inches square, its sectional area being 9 inches. In this case we have E equal to 12,000 tons, and let the tensile force applied to it in the direction of its length be 100 tons; then the product of the load into the length is 1,000, and that of E into the sectional area is 108,000; dividing the former product by the latter we find the extension produced in the bar to be the 108th part of a foot, or the ninth part of an inch.

Suppose a similar bar of cast-iron to be subjected to a compressive force of 100 tons, the value of E being 5,360 tons; then the first product is 1,000 as before, and the second product is 48,240; dividing the former by the latter we have the compression in the bar equal to the forty-eighth part of a foot or one-quarter of an inch.

An oak post 6 inches square and 10 feet long has to support a load of 18 tons; what amount of compression will be produced by the load when E is equal to 690 tons? Here the first product is 180, to be divided by the second product which is 24,840, so that the answer is 138th part of a foot or about one-twelfth of an inch. If the applied force had been tensile, then the beam would have been stretched the same amount by the same force.

(*To be continued.*)

SHERE IN SURREY.*

I have not been able to discover anything in the various books I have read marking Shere as an historical spot. No great events have happened here, and Bray, the historian (a native of Shere), only marks the place on his map just to show where it is situated. As my friend Harradence observes, "It seems curious that Bray makes no suggestion as to the derivation of Shere, its alternate spelling to Shiere, and without knowledge I should associate it with Shire, not in the wide sense we use the word to-day, but as a division, a portion, or share, as the meaning is variously given. The Anglo-Saxon word is scire, or scirian, to cut off, and to the Anglo-Saxon language rather than to the Latin, I think, we can trace the origin of scissors and kindred words. Scissors easily brings us back to shears, and shear, a cutting off; and Shere, if we may believe tradition, was cut off from Albury. Sherborne, in Dorset, contained the Anglo-Saxon cathedral of the Shire, and Sherwood was the forest of the Shire of Nottingham. Sher is frequently used as a prefix, and in many cases, I doubt not, we could associate it with shire. But all this is merely conjectural."

Now I do not presume to be able to write a word-picture of Shere and its surroundings. You have seen this beautiful Surrey village, situated as it is like a nest in the heart of most lovely country.

The poet Cowper wrote:—

> The statesman, lawyer, merchant, man of trade,
> Pants for the refuge of some rural shade,
> Where, all his long anxieties forgot,
> He views the charms of some sequestered spot.

Surely such a spot is Shere, with its ancient church, its half-timbered cottages, and its limpid and beautiful river Tillingbourne. Here is the home of peace, where the hero's weapons are the pen and the brush.

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* A paper read by Mr. C. F. Partington at the visit of the members of the Upper Norwood Athenæum.

Among the names of those who have lived here, or in the neighbourhood, I find William Bray, the historian of Surrey (in conjunction with the Rev. Owen Manning, vicar of Godalming), and the editor of Evelyn's "Diary;" George Grote, author of the "History of Greece;" Martin Tupper, the philosopher; and Elias Ashmole, the antiquary.

I learn that the present church of Shere, dedicated to St. James (not to St. Giles, as recorded by Murray), probably occupies the site of a much older building of Saxon times, mentioned in Domesday Book, 1086, as the church of Essira—parts of Shere and Albury churches are traditionally stated to have been built with materials from the old Roman ruins which existed at Albury. Originally the church was cruciform, consisting of a central tower on four Norman arches, which opened into a nave, apsidal chancel and two truncated transepts, of which one remains on the north side now. The date of this cruciform building was about 1150. The first alteration occurred within a century, when the south aisle was added as far as the south-west buttress of the tower. The present west doorway and the font belong to this period, *i.e.* circ. 1250. It is supposed that the original Norman doorway was moved from the west to the south when the aisle was added in the early thirteenth century. This is a fine specimen of work with zigzag mouldings, the lower arch being a copy, one hundred years later, the Purbeck marble columns supporting the main arch being of the same date. Inside this porch there are pilgrim marks made with daggers here and there, also a fine oak chest over 7 feet 2 inches in length, with three locks. In those days great care was exercised in the protection of the records, ornaments, &c., for the three locks had three separate keys, and these were held by three people, all of whom had to be present before the chest could be opened. The present buttresses were built to strengthen the tower; then the aisle was lengthened to a few feet east of the tower, and the chancel was extended to the present length of the chancel aisle. The aisle was lengthened to its present extent early in the nineteenth century, and the chancel was extended and its north wall rebuilt. The present timber spire was erected about the fourteenth century, the original spire having a low shingled roof. An entry in the churchwardens' books shows that the west porch was erected in the sixteenth century, and it is supposed that the north porch was added soon afterwards. The most noticeable features in the church are the handsome Early English font in Purbeck marble, the finely-moulded arch with clustered marble shafts dividing the south aisle, the noble windows on the east and north side, containing a few beautiful fragments of thirteenth-century glass (said to be rare in Surrey), the traces of fresco paintings round the east window of the chancel, the squint or hagioscope with the quatrefoil for the administration of the Holy Communion through the chancel wall, and the Jacobean door leading to tower.

In the window of the north chapel there are three red roses, said to testify to the Lancastrian tendencies of James, the second Earl of Ormond, in whose family the manor and advowson of Shere were formerly vested. There are some good brasses, among them one to Robert Sawcliff or Scarcliff, rector of Shere in 1400, and one to John Touchet, Lord Audley, 1491, who became possessed of the manor and advowson on the attainder of Lord Ormond, and from whose family, on the execution of his son for high treason, it passed into the family of Sir Reginald Bray.

There are tablets to Edward Woods, of Kingston, Surrey, died September 19, 1837, and who "left 500*l.* in 3 per cent. consols; 2*l.* a year each to seven widows and 1*l.* to the minister to preach a sermon on February 14 for ever." To William Bray, "the historian of this, his native county, who died on December 21, 1832, in the ninety-seventh year of his age." To Edward Bray, born January 4, 1687, died in 1739; and a modern brass to William Milbourne James, Lord Justice of Appeal, who died in London on June 8, 1881; born Merthyr Tydvil, June 29, 1807. It is recorded that "he spent many happy holidays in the neighbourhood of Albury and Shere," so I presume this gentleman was a rambler like ourselves.

I am indebted to the courtesy of the Rev. F C. Hill, rector of Shere, and to several guide-books for much of my information, and to a small book on "Field-path Rambles" for the choice of route taken, and I feel that it would be almost impossible to find anything more lovely. The scenery is so diversified, the panoramic views from Juniper Hill so magnificent, while the Silent Pool in the glen below is one of nature's beauty spots.

Count Sacconi, the architect of the national monument to King Victor Emmanuel II., had charge of the preparations for the ceremonies of the funeral of King Humbert at the Pantheon, Rome.

THE TREATMENT OF ST. PAUL'S.

THE following letter has been addressed to the Dean of St. Paul's:—

Dear Sir,—Interest in the progress of the works at St. Paul's remains unabated, and it will be a source of satisfaction to all admirers of Wren to find that some portions of the stencilling and some of the wooden rosettes which are attached to the stonework have been removed from beneath the dome. We venture to express the hope that the experiments now in hand will result in the cessation of work which, in our opinion, is out of sympathy with the character of the building and injurious to its dignity. We would specially direct attention to the panels which have been introduced, without reference to Sir C. Wren's intentions, into the spandrels upon each side of the diagonal arches of the octagon.

A new and prominent feature is also being added to the building which is open to grave question, namely, the red and gilded iron railing now being placed upon the main cornice. If a railing be necessary in this position to enable the mosaic and painted decorations to be seen, we respectfully submit that it should be something extremely light, after the manner of many good examples in Italy, and that it should be devised so as to carefully abstain from affecting the proportions of the building or interfering with the design of the attic. The railing in question seems to us to have both these defects, and in this regard differs from the old railing at the west end, which not only avoids any interference with the architecture, but is a thing of beauty in itself.

We trust that this new railing may be reconsidered in greater sympathy with the architectural demands and qualities of our metropolitan cathedral, and, if possible, abandoned.

In the interests involved we are giving publicity to this letter, and remain, dear sir, yours very faithfully,

J. M. Brydon.
John Belcher, A.R.A.
John F. Bentley.
W. D. Caroe.
Edward W. Mountford.
Thos. E. Collcutt.
Mervyn E. Macartney.
Ernest George.
Edward S. Prior.
Ernest Newton.
J. Oldrid Scott.
Leonard Stokes.
B. Ingelow.
James Brooks.
E. R. Robson.
Alexander Graham.
Basil Champneys.
J. J. Stevenson.

The Dean of St. Paul's has sent the following reply:—

West Hoathly Vicarage: August 3, 1900.

Dear Sir,—I have received this morning an address signed by yourself and a number of your friends relative to "the decoration of St. Paul's," which appears also in the *Times* of this morning. I will place it before my colleagues of the Chapter when I have the pleasure of meeting them after the vacation.

I regret to notice that so far as I can remember not one of those who sign the address has shown his interest in the decoration of St. Paul's by subscribing to the fund raised for that purpose.—Yours truly, Robert Gregory.

J. M. Brydon, Esq.

THE LONDON AND MIDDLESEX ARCHÆOLOGICAL SOCIETY.

THE annual meeting of this Society, which was presided over by Mr. John Tolhurst, F.S.A., took place on the 30th ult, at the London Institution, Finsbury Circus. The Council, in their forty-fifth annual report, after alluding to the loss the Society had sustained by the deaths of Mr. J. E. Gardiner, F.S.A. (a vice-president), Mr. William Thorpe, B.Sc., F.C.S., Professor Banister Fletcher, C.C., J.P., and Mr. James Smith, the working man's antiquary, stated that fourteen new members had joined during the year, bringing the total membership up to 161. Mr. T. W. Shore, F.G.S., the hon. secretary of the Hampshire Field Club, had accepted the office of organising excursion secretary. During the year four meetings were held, and two rural excursions had taken place. The publications issued to members comprised the Society's album, with a first instalment of reproductions of three scarce London prints, and a new part of the Society's transactions, including a continuation of the London and Middlesex Inquisitiones post-mortem. In regard to general archæological activity the Secretary had continued to watch the demolition of the church of St. Michael Bassishaw, and had secured for the Guildhall Museum additional architectural fragments of the edifice, which existed before the Great Fire. Further, the extensive discoveries of Mediæval ruins at Blackfriars had been carefully watched, and photographs and measured drawings obtained. The treasurer's statement of accounts showed a balance in hand of 268*l.* 15*s.* 11*d.* The report was adopted.

NOTES AND COMMENTS.

Ary Renan, who died on Saturday last, could be considered as a remarkable example of the effect of hereditary influences. He was equally successful as a writer and a painter. The grandson of Ary Scheffer, like that painter he had a tendency towards mystical subjects, which was fostered in him by his master, Gustave Moreau. Unlike his grandfather, he was endowed with a love of colour. His paintings were so refined and so brilliant, he might be taken for a resurrectionised illuminator who knew he was out of his element in the Paris of the nineteenth century. But the simplicity was a sign of self-consciousness. He would have been an admirable missal-painter, and might well have adorned the pages of the "Paroissien" held by delicate hands, covered by the best Paris gloves, of which his father, Ernest Renan, was willing to become the binding. Ary Renan had not his father's lore, and he had not gone through the sorrowful disillusionising which helped to give charm to books on the most solemn subjects. But his essays on art are distinguished by a style which is not common in the writings of painters. Taken as a whole, his paintings and writings were marked by qualities which somewhat suggested the invalid, and in that way he was a representative of the decadence to which the best intellects in France are more or less victims.

The Americans have carried bridge construction in iron and steel to such extraordinary lengths, and have displayed so much invention in the arrangement of the various parts, it was reasonable to conclude that they cared only for structures in metal, of which they have been able to send examples to many parts of the world. It would appear, however, that a reaction has commenced, for the directors of the Pennsylvania Railway have arranged to supersede the iron bridge across the Susquehanna river at Rockville, near Harrisburg, by one of masonry. The structure about to be removed consists of twenty-three spans of about 160 feet each. The masonry bridge will have forty-eight spans of 70 feet each, and including piers and approaches the total length will be 3,820 feet, or nearly three-quarters of a mile. As an example of construction the new bridge may not show the daring which is usual with American engineers. The old Romans would have made no account of spans of 70 feet, and any of the local authorities in Great Britain would be able to have arches of that width erected without going far for contractors. But what gives interest to the proposal is the fact that masonry is considered to have advantages over steel in endurance and economy of repairs.

The sacredness of the building line has been again upheld by the Lord Justices in a case which necessarily has importance for architects and builders, as well as for property owners. The appellant, Mr. John Arthur Wright, proposed to erect a block of residential flats in Hartington Place, Eastbourne, and submitted plans to the Corporation. The plans were declared to be in accordance with the by-laws, but they could not be approved because the line of frontage was said to project beyond the adjoining premises. Mr. Wright therefore applied for a *rule nisi* for a mandamus to the Corporation, directing them to approve of the building line. The Divisional Court, consisting of Mr. Justice Ridley and Mr. Justice Darling, held that if the Corporation, as the urban sanitary authority, had come bona fide to the conclusion that the plans would be an infringement of the Public Health Act of 1888, they had the right to disapprove of them, and that their determination was final. According to section 3 of that Act, "it shall not be lawful in any urban district, without the written consent of the urban authority, to erect or bring forward any house or building in any street, or any part of such house or building, beyond the front main wall of the house or building on either side thereof in the same street." The rule was therefore discharged. The case was then taken to the Court of Appeal, and it was contended that the *locus in quo* was not a street within the meaning of the Act of 1888. However, it would be necessary to erect the building and then go before a magistrate in order to determine whether the statute was infringed. Lord Justice Smith said the Corporation in good faith had declared that the proposed building would contravene section 3. The Court should not be called upon to order any local authority to approve of plans which the authority considered were in contravention of the statute. The decision of the Divisional Court was perfectly right, for if a mandamus were ordered, in effect it would be to command the local authority to permit that to be done which the statute said should not be done unless in their discretion they sanctioned it. The case corresponded with Smith *v.* Chorley Rural Council, in which Lord Justice Chitty said :—"They (the district council) had jurisdiction in the matter, which they honestly exercised, and it was part of the question before them whether the building of the new houses amounted to laying out a new street. It is apparent that the object of the action is that the High Court may review the decision arrived at by the district council and overrule it. In my opinion such an action will not lie." Lord Justice Vaughan Williams concurred, and the appeal was therefore dismissed with costs. As there appears to be only one house adjoining the proposed building the decision may seem to be hard on the appellant. Probably it is reasonable to conclude that a building line may be only imaginative, provided it receives the sanction of an urban authority.

The principle of architectural competition has found so much favour with Germans they do not hesitate to employ it in order to obtain designs for private buildings. At the present time in the Industrial Museum of Cologne a series of drawings by different architects are to be seen, which were recently prepared for business premises in the principal street of the city. As the proposed building is to adjoin the Reichsbank, it was considered desirable that as much as possible should be made of the position, and the architects of Cologne most readily entered into the spirit of the contest. The first prize was awarded to a design by Messrs. Boes & Giesen, the second prize was gained by Herr Bentzki. The latter has been so eager to utilise the opportunity that he has submitted several variations of some of the principal parts. The gable, for instance, is in one design shown with metal decoration, and in another with sculpture, while in a third it is made to develop into a turret with a balcony. The fertility of the architect's invention may not have served him, for where so much is interesting it is difficult to decide what treatment is most eligible. The third prize was gained by Herr Endler, whose design, like those of the other prizemen, suggests the skill which now prevails in Cologne.

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: VIEW FROM WEST.

Owing to the interest attached to the mystical number three in Mediæval times, as well as for the sake of architectural effect, three towers and spires were often erected as part of cathedrals. In England there has been only one survival of the arrangement—that of Lichfield. The spires were there peculiarly necessary, for the cathedral does not stand on an elevated site, and without the towers and spires would not have an imposing appearance. The three form a fine group from whatever point of view they are seen. It is unfortunate, however, that as their history is not known, it is impossible to recall the names of the men to whom we are indebted for the creation of such important additions to the cathedral. It is supposed that the central spire, which is 280 feet high, is not of older date than the seventeenth century, for it is said to have taken the place of an older spire which had suffered during the attacks on the cathedral by the Parliamentary forces. If so, it is remarkable that a work which might almost be called modern should not have any written evidence of the time of its erection or of its builders. It is believed the spires which crown the west front were erected during the episcopate of Roger de Norbury, but there is no certainty on the subject. Both spires have undergone reparation from time to time, but the general effect may not have been diminished.

DESIGN FOR NEW SESSIONS HOUSE, OLD BAILEY. PUBLIC HALL PERSPECTIVE VIEW. SECTION. COURT FLOOR PLAN.

STAINED GLASS IN ENGLAND SINCE THE GOTHIC REVIVAL.

WITH SOME ACCOUNT OF THE CHURCHES REFERRED TO.

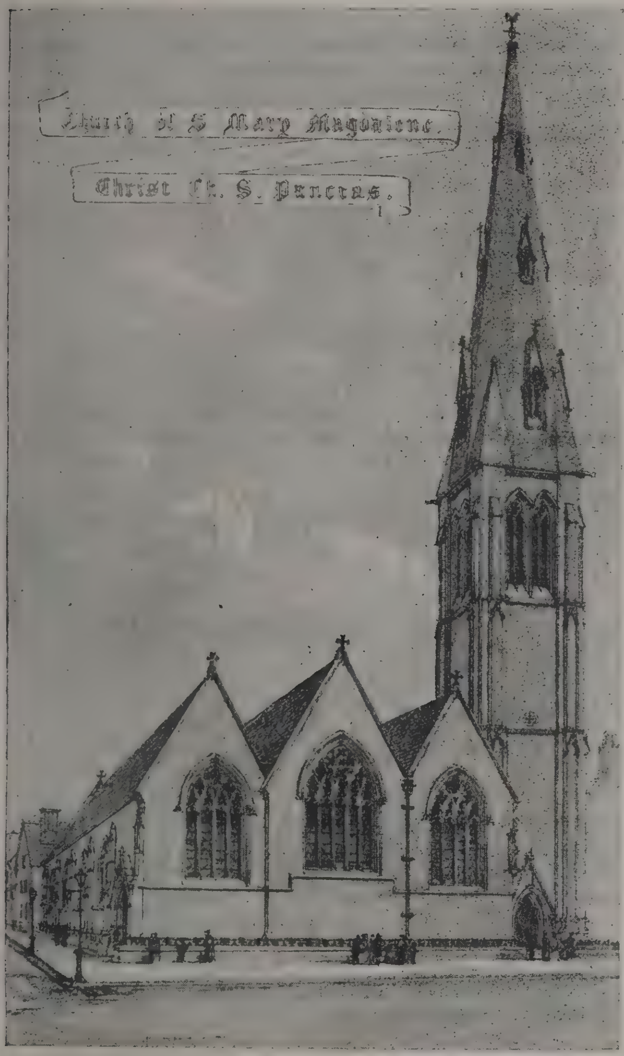
By T. Francis Bumpus,

Author of "Ecclesiologia Germanica," "Summer Holidays among French Cathedrals," &c.

(*Continued from page* 13.)

The Works of Hardman.

It is to be regretted that in a church so closely environed by secular buildings as St. Paul's, Brighton, the architect did not give his south aisle, which is considerably wider than the northern one, a separately gabled roof. As it is, the employment of lean-to roofed aisles, in conjunction with an unclerestoried nave, is very detrimental to the appearance of this otherwise fine church internally, causing it to wear a somewhat gloomy look, and to have necessitated the introduction of dormers, without which the delicate fresco above the chancel arch—executed some time ago by Mr. George Parlby, under the direction of Mr. Daniel Bell—would be invisible.


Church of S. Mary Magdalene.
Christ Ch. S. Pancras.

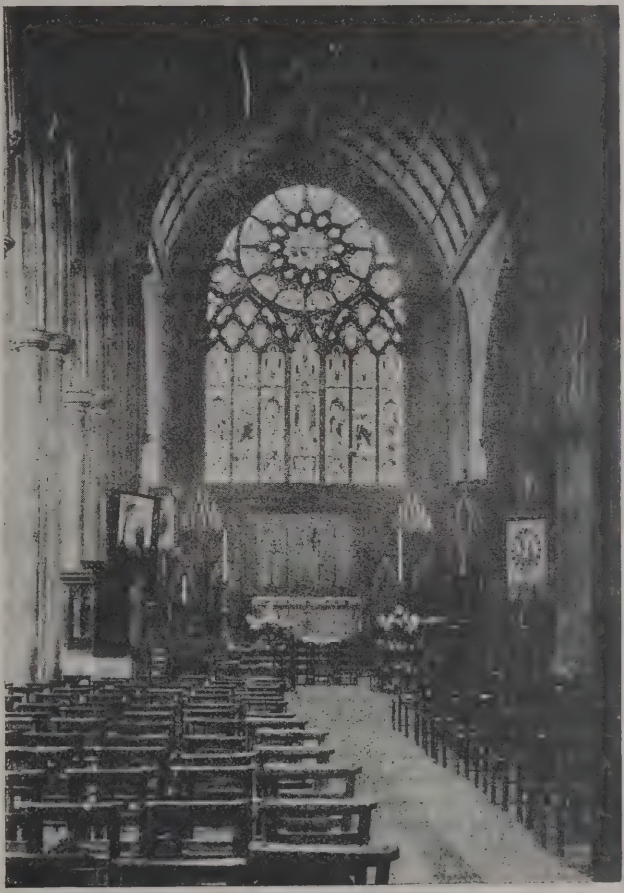
St. Mary Magdalene's, Munster Square.
(*From an Engraving published in* 1849.)[*]

This defect was no doubt felt by Carpenter, for in the next important work with which he was entrusted—St. Mary Magdalene's, Munster Square, near Regent's Park, another church containing interesting stained-glass of the Hardman-Pugin manufacture—he took as his model such noble fragments of Edwardian Pointed as the nave of the church of Austin Friars, near Broad Street, and the choir of St. Thomas, Winchelsea, and gave us a building comprising, to speak strictly, three naves and three chancels, the separately-gabled aisles being much too spacious and developed to bear such an appellation in this instance.

For a town church a finer type could hardly have been selected, and in its Geometrical Decorated style, melting in the eastern portion into the reticulated, we have another proof of Carpenter's thorough mastery of what an eminent architectural critic has termed "the grammar of his art."

The history of St. Mary Magdalene's, Munster Square, is interesting, and demands a few words. It was founded in 1849 upon a site purchased by the congregation of Christ Church, Albany Street,[*] by Rev. Edward Stuart, M.A., then one of the assistant clergy of that church, and who, after erecting a greater portion of St. Mary Magdalene's at his own cost and providing it with an endowment, spent the best twenty-five years of his life in its service, dying in February 1877.

The laying of the foundation-stone of this remarkable edifice on July 10, 1849, by Baron Alderson—the inauguration of a church wherein rich and poor might meet together—was made the occasion of an ecclesiastical display through the streets, after a celebration of the Holy Communion and a sermon by the author of "The Christian Year" in Christ Church, Albany Street, whose surpliced choir, reinforced by contingents from St. Andrew's, Wells Street, Margaret Chapel, St. Mark's College, Chelsea, and the Chapel Royal, St. James's, gave great force under the direction of Rev. Thos. Helmore to the chanting of several Gregorian tones—a feature of the ceremonial that has often been described as most impressive, being as it was at that time a novelty in outdoor ecclesiastical functions.



St. Mary Magdalene's, Munster Square. The Nave and Chancel.

Three years later the nave and chancel, each with its south aisle, were finished and consecrated by Bishop Blomfield April 22, 1852. The *Illustrated London News* in its number for June 19 of that year gave, as in those days it very frequently used to do of new churches built in London and the provinces, an excellent wood-engraving of St. Mary Magdalene's, which from the interesting associations environing its promotion secured more than ordinary interest from the church-going section of the community, and chiefly from the excellence of its architecture. For its reverend founder, being of an independent and determined mind, and to be likened in some respects to a layman in another London district parish not far distant,* was resolved, to use the words of Frank Buckland, for many years a devout worshipper in this solemn sanctuary, "to build a church which should be as nearly perfection as the handicraft of men, the skill of architects, and the experience and ingenuity of ecclesiastical art could make it."

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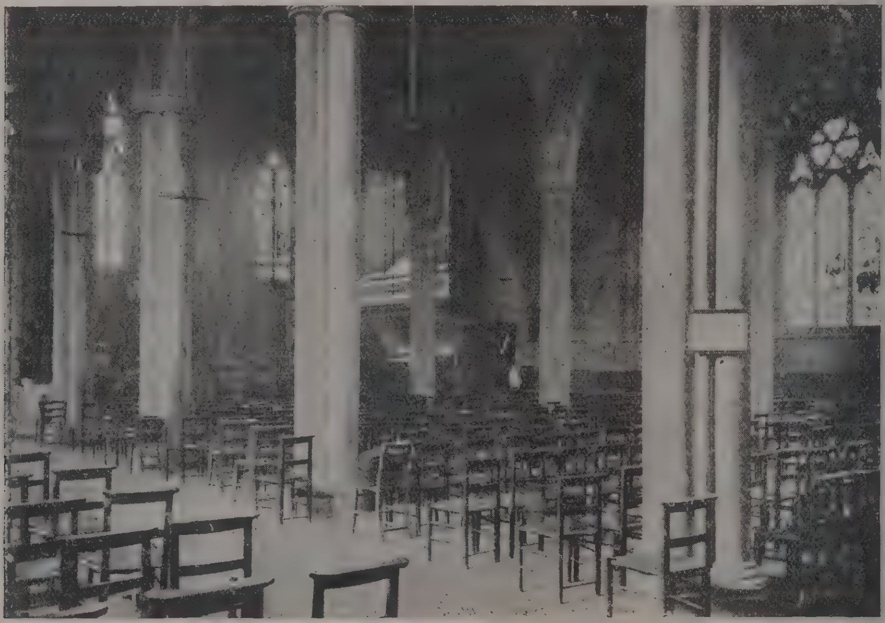
[*] Certain departures from this, the architect's original design, were made when the northern nave was added under the direction of Messrs. Carpenter and Ingelow in 1883–84.

[*] A hideous structure finished in 1837 from the designs of Pennethorne, but interesting as the first church built under Bishop Blomfield's Metropolis Churches Scheme. Its interior has several times undergone amelioration and embellishment, the most noteworthy taking place 1866-67 under Butterfield, whose treatment of the chancel and altar recess was most masterly.

For thirty years the noble design put forth by Richard Carpenter remained incomplete, while, of course, private houses and villas, and other secular buildings such as clubs, stock banks, public offices, town halls, municipal buildings, gin palaces, theatres, Board schools and what not were being run up with mushroom rapidity—the sums to build them no sooner required than furnished—and in which nothing was omitted conducive to comfort and luxury, while this House of God was allowed to remain destitute not only of its north aisle, but *inter alia* of that graceful steeple which has even yet to become an accomplished fact. Even in its incomplete state, however, St. Mary Magdalene's presented one of the most impressive and strikingly devotional—it may also be added pictorial—of London church interiors, with its graceful row of Middle Pointed columns and carefully moulded arches separating the nave from its almost equally wide south aisle; its deep dim chancel and richly appointed sanctuary; its stained-glass filling all the windows; its chair-seated area; and with the odour of incense which, always pervading it, indicated the type of service in vogue there.†



St. Mary Magdalene's, Munster Square. View across Nave.

In 1883-84 the northern aisle was added as a memorial to the founder, thus completing the noble plan conceived by Richard Carpenter,‡ who survived the consecration of the first portion of this—his noblest work—but three years, dying March 27, 1855, just at a time when he seemed raised up to accomplish great things.

The writer trusts he will not be accused of hypercriticism when he expresses his opinion that, proportionally considered, St. Mary Magdalene's appeared more pleasing when in its incomplete state, the great breadth of its side naves seeming to render an additional two bays of length necessary to preserve the balance, though, of course, this desired consummation, from the proximity of the church to Osnaburgh Street, can never be attained. To some extent this defect (if such it can be called) would be remedied by the presence of a tall but very light rood-screen.

Next to its air of town-like spaciousness and religiosity, the most striking feature of this church is the number and size of its windows. Many of these exhibit most graceful studies of tracery, both in its geometrical and reticulated form, and all, with the exception of one, have received their complement of stained-glass, which, if it varies somewhat in quality, is as a whole meritorious for the uniformity pervading its design, despite the employment of several artists.

The first glass inserted in St. Mary Magdalene's is that which fills the grandly thrown up seven-light east window, whose tracery so skilfully brackets Early with Late Middle Pointed by Hardman, from the designs of Augustus Welby Pugin. It was often referred to by the latter as one of the best windows executed in England up to the period of its insertion—*i.e.* 1852—much of its excellence being derived no doubt from the iconographical skill of that wonderful person, the figures being beautifully proportioned to the lights they occupy, and breathing quite the Mediæval spirit without excessive archaism. The centre of the great rose is filled with a representation of Our Saviour in the act of benediction, the radii containing figures of angels, while in the lights below are the Crucifixion, with, on the right, figures of the Blessed Virgin, St. John and St. James, representing the state of

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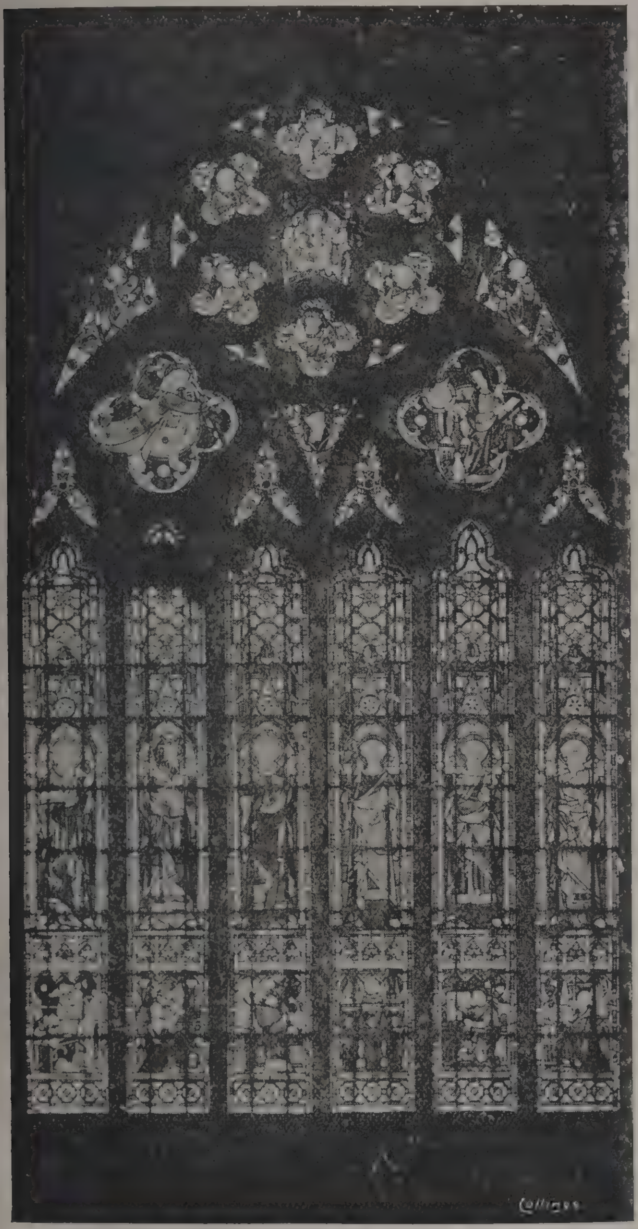
* Robert Brett, founder of St. Matthias's Church and Schools, Stoke Newington.

† Incense was introduced at St. Mary Magdalene's as early as 1857, its use being confined to processions, functions for the display of which the spaciousness of the church is eminently calculated.

‡ The original works of Richard Carpenter, who was born in 1812—the same year as Pugin—fill a long list, the most important of them, besides St. Paul's, Brighton, and St. Mary Magdalene's, Munster Square, being St. Stephen's and St. Andrew's, Birmingham; St. Nicholas, Kemerton; All Saints, Brighton; the subdeanery church of St. Peter at Chichester; Christ Church, Milton, near Gravesend; and St. John the Baptist, Bovey Tracey. Chichester Cathedral early passed into Carpenter's hands for reparation and ritual amelioration, notable among his works there being the tracery of the great western window. Of the churches entrusted to him for restoration, the nave of Sherborne Abbey, St. Margaret's, Leicester, Old and New Shoreham, Sompting and Eastbourne, Algarkirk, Little Maplestead and Maidstone may be selected. Carpenter prepared elaborate designs for the restoration of St. Patrick's, Dublin, but to the eternal regret of those who admire that exquisite specimen of Hibernian First Pointed, they were not permitted to become a *fait accompli*. He also had entrusted to him the designs for the cathedral of Inverness, a drawing of whose stately façade, directed by its distinguished author from his death-bed, graced the walls of the architectural court of the Paris Exhibition of 1855. This cathedral has, however, since been built by other hands. Two of Carpenter's greatest original works—the colleges of Hurstpierpoint and Lancing—were completed after his death. The chapel of the latter, conceived on a much humbler scale, was subsequently altered to its present grandiose dimensions. At length roofed and glazed, this, perhaps the most nobly proportioned college chapel in England, only awaits its fittings.

"Innocence," and on the left those of St. Mary Magdalene, St. Peter and St. Paul, representing the state of "Penitence."

Less successful are the next two windows put in by Hardman—the four-light reticulated one on the south side of the sanctuary, with canopied effigies of St. Stephen, St. Clement, St. Timothy and St. Chad; and the grand five-light one terminating the southern chancel, and representing English saints, among whom occurs St. Pancras, the patron saint of the mother parish in which St. Mary Magdalene's is situated. In the former the tones are exceedingly raw and unpleasant; in the latter, where the canopy-work is somewhat coarse in conception and execution, they are less hot, but in both instances the work has suffered from insufficient burning, certain portions, notably the features of the effigies and the legends beneath them, being well-nigh obliterated. Still, the large south-aisle window, viewed from a distance or across the church from the north-west corner, is good in general effect from the thoroughly religious character pervading it and its harmony with the surrounding architecture. The corresponding window of the northern chancel with the Patron between the Four Evangelists, that to the immediate left of it, and the western window of the north and south naves have all been inserted during the past twenty years by Messrs. Clayton & Bell, of whose skill they are without exception singularly fine specimens. Two early works of the same artists are the Alderson memorial windows in the south nave, one of which—the Resurrection window—is said to owe its opaqueness of colouration to Mr. Butterfield, under whose superintendence it was carried out.



St. Mary Magdalene's, Munster Square. Great West (Carpenter Memorial) Window.*

Lavers & Barraud's window, the most westernly of the three on this side, though abounding in graceful draughtsmanship, is ineffective from the want of white to keep the whole in balance, a defect under which the majority of the works executed during the earlier part of those artists' career (1855-65) may be said to labour. Neither can Messrs. Heaton & Butler be complimented upon the glass which they have placed in the three windows of the northern nave. There is, it is true, a certain agreeable prettiness about it, but in feeling the work is too late for the style, and the tinctures seem thin and poor, though perhaps it was felt desirable to exclude as little light as possible from this side of the church.

Of the stained-glass in St. Mary Magdalene's the most interesting, perhaps, to the architect is that in the western window of the central nave. A memorial to Richard Carpenter, this glass was fixed in position in 1857, two years after the death of that talented artist. It was hoped that with the balance remaining after the window had been paid for a Carpenter architectural prize might have been founded, but as an insufficient sum remained for this purpose the balance was, on the recommendation of several members of the Ecclesiological Society, whose interest in St. Mary Magdalene's was not inconsiderable, paid over to the treasurer of the Pugin Memorial Fund—a very appropriate arrangement when the friendship between Carpenter and Pugin is remembered.

The cartoons for this window—of which the writer is proud to have secured so fine a representation—are from the pencil of Carpenter's old pupil in the vitreous art, Mr. J. R. Clayton, the mechanical part being entrusted to Hardman. The tinctures are very firm, full and rich, and the whole window quite devoid of that ultra refinement of pose and thinness of feature-drawing of which its executant subsequently became too fond. Of especial loveliness are the tones of the glass in the tracery, whose rose exhibits in the central sexfoil the Blessed Virgin with the Divine Infant, and the encircling quatrefoils, busts of Old Testament personages, the whole forming a species of Radix Jesse, while equally delicate is the Annunciation, portrayed in the large quatrefoil of either subarcuation. Upon inspection of this window it will be found that the effigies filling the central portion of its six lights refer more or less to building. Thus to the extreme left is Noah with, in a predella beneath him, the Ark; Moses has the Tabernacle; Solomon the Temple; St. John the Heavenly Jerusalem; St. Luke, his figure in small painting the Virgin and Child; while St. Thomas (by tradition a carpenter) has beneath him a kneeling figure of the architect offering a model of St. Mary Magdalene's Church as it would appear when completed.

A brass plate let into the wall below bears the following inscription:—

FENESTRAM OCCIDENTALEM
AMICI SUI VITREIS TABULIS
ORNARI FECERUNT
IN MEMORIAM
RICARDI C. CARPENTER,
VIRI PII INGENIOSI DEFLETI
HUJUS ECCLESIÆ ARCHITECTI,
QUI NATUS EST A.S. MDCCCXII
ET DECESSIT A.S. MDCCCLV.

Those who are as yet unacquainted with St. Mary Magdalene, Munster Square, are recommended to pay this interesting specimen of revived ecclesiology a visit, and, if possible, during a fine sunset.

The Bishop of Wakefield has laid the foundation-stone of the new church of St. Barnabas, Crosland Moor, Huddersfield. The church is for a new parish which has been taken from three adjoining parishes, and it is endowed with 10,000*l.* given by an anonymous donor. It is to cost between 11,000*l.* and 12,000*l.*

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* It should be explained that the blotch at the top of the second light from the left is due to the presence of a bird's-nest. Well may one exclaim with the Psalmist, "Yea, the sparrow hath found her an house, and the swallow a nest where she may lay her young: even Thy altars, O Lord of hosts, my King and my God."

SOMERSETSHIRE ARCHÆOLOGICAL SOCIETY.

THE fifty-second annual meeting of the Somersetshire Archæological Society was held this year at Dulverton. The president is Sir C. Thomas Dyke Acland, Bart.

The annual report stated that since the last report nineteen new names had been added to the list of members. The total number of members was now 622. The work of the repair of the great hall at Taunton Castle had been completed, and the geological and some other portions of the museum were now in progress of arrangement therein. This is necessarily, however, a work of labour, and would occupy some time. The improvement in the property is apparent, and the value of the collections for the purpose of study and reference was greatly enhanced. The subscriptions to the restoration fund from various sources, including Colonel Pinney's legacy of 300*l*, amounted to 714*l*. 6*s*. 6*d*. An expenditure and liability aggregating to 850*l*. had, however, been incurred, leaving a sum of 140*l*. or thereabouts to be provided. The committee appealed to the members and others interested in the county for subscriptions. The number of visitors to the museum in 1899 was 4,978, a decrease of 104 as against 1898.

Photographic Record of the County.

The report on the photographic record of the county, which was signed by Mr. C. H. Bothamley, hon. sec. to the committee, stated that some progress had been made in the collection of photographs of places of interest in the county, though it was still to be regretted that the work did not proceed more rapidly. The chief difficulty was still the fact that comparatively few of those interested in archæology were also photographers, whilst very few of the more numerous body of photographers took any interest in archæology or even in history. Recently, however, some promises of valuable help had been obtained, and it was hoped that prints would come in more rapidly. It ought perhaps to be stated that in all counties where photographic surveys had been organised the same difficulties seemed to be met with.

Somerset Record Society.

The Rev. E. H. Bates made a report on the work of the Somersetshire Record Society. He remarked that owing to delay the Cartulary of Athelney Abbey would be produced in the millenary of King Alfred. Winchester wanted to get up some kind of monument to King Alfred, but if a tangible monument were required Somerset had as much right to one as Winchester, for the few relics which could honestly be said to have belonged to the king were found in Somerset or were connected with it. For instance, King Alfred's Jewel was found at North Newton, and it was now in the Ashmolean Museum at Oxford, although had that Society been in existence at the date of its discovery it would no doubt have secured it. He thought the publication of the Athelney Cartulary would form a good memorial of Alfred, as that great monarch was much more associated with that abbey in his life than with Winchester in his death. The Record Society intended to publish a number of ancient wills next year.

Missing Church Books.

The Rev. Canon Church said he had been desired by Bishop Hobhouse to bring before the Society the fact of the insecurity of parish books, and the Bishop suggested that by some resolution they might do something towards providing a little more security. The churchwardens' accounts of Banwell, dating from 1516 to the end of Elizabeth's reign, which were seen by Bishop Hobhouse in 1890, had disappeared when the present incumbent was inducted in 1896, and many similar losses had happened and might easily recur. The Bishop suggested the passing of the following resolution :—"This Society, hearing of the loss of the churchwardens' accounts of Banwell, is anxious to impress on the minds of all incumbents and churchwardens in the diocese the expediency of placing on the inventory of church goods a list of all books and documentary matter belonging to the church, and all such property produced at the Easter vestry and passed according to the 89th Canon of 1603 from the outgoing to the incoming churchwardens in the presence of the vestry or the delegates thereof." Canon Church proposed this resolution.

Prebendary Coleman seconded.

The Rev. F. W. Weaver said directly he heard of this loss he did his best to secure the recovery of the books, and the late Archdeacon Salmon held an inquiry, but without successful result. He believed a copy of the documents was made thirty or forty years ago. He could not help thinking that the original documents would yet turn up.

The Rev. C. H. Heale suggested that the rural deans should make an inspection of church documents at their visitations, and the Rev. S. J. M. Price thought the archdeacons should be asked to do the same.

The President agreed that there was much need of greater care in the preservation of such documents.

Mr. Elworthy feared the mischief had already been done, and that all that they could do was to take care of the future.

The resolution was adopted, and the suggestions mentioned were added as riders.

The Blake Statue at Bridgwater.

Dr. Winterbotham reported the progress made in regard to the Blake statue since the Society met in Bridgwater three years ago. At that meeting a paper was read by Professor Montague Burrows, who drew attention to the fact that Blake had never been commemorated. The result was that the paper stirred up a certain amount of enthusiasm, which cooled down for some time. In the following spring, however, a small but lusty band gathered themselves together, and they resolved to make an attempt to raise a statue. They entrusted the commission to Mr. Frederick Pomeroy, and the statue was now in the Royal Academy. It was worthy of his hand, worthy of their acceptance, and worthy to commemorate the great man whose memory they wished to honour. The adornment of the pedestal was nearly completed, with two bas-reliefs giving scenes in his life, and these were really beautiful work. They had not sufficient money to finish the pedestal, and as secretary of the memorial fund he would be glad to receive contributions. The statue was to be unveiled on Thursday, October 4.

Presidential Address.

Sir Thomas Acland then gave his presidential address, in which he dealt with the natural features and antiquities of the district. He said :—It is impossible for anyone so completely ignorant as I am both of archæology and of natural history, standing as I do before an audience whose very presence in this room is an evidence of a keen interest and at least of some knowledge of one or the other of these subjects, not to feel how much he owes to the kind feeling of those who have conferred upon him the honour which you have conferred upon this occasion upon myself in asking me to become President of your Society for the ensuing year. I believe the best return that I can attempt to make for your kindness is that I should endeavour briefly to indicate some of the interesting associations which cluster round the beautiful district in which we are met and to suggest some considerations and ideas in connection with the places which you propose to visit. But before beginning to do this I should like to say one word of testimony to the value of societies such as this and to your wisdom in combining within your ken two subjects which might seem to some persons so widely disassociated as archæology and natural history. I am convinced that as the spread of education goes on and we are increasingly able to foster and develop the powers of observation of the young people in our rural schools, the most successful way in which we can achieve the result, so beneficial to themselves as well as so desirable from other points of view, of attaching them to their rural homes and enabling them to lead lives there full of interest and stimulus, is that we should cultivate to the utmost in them—and therefore, in order to do so, first in our own selves—the power and the habit of taking an intelligent interest in the beauties and the wonders of the world around us and close to us. You, the members of this Society, have for your object the study of facts and the recording of them concerning, in archæology, some of the most permanent and interesting of the works of man, and concerning, in natural history, what since the days of the Psalmist have been commonly called the works of God, which are all alike wonderful and all alike good. And I think the spirit of gratitude and respect to our forefathers inculcated by the one study, and the spirit of reverence, wonder, and love of truth inculcated by the other, are each of them well worth cultivating both in ourselves and in the interest of those among whom we have to live. To return to the subject with which I set out, I wonder whether it has ever struck you that the two great moorland districts of the West are to some extent in shape the converse of each other. Dartmoor may be compared to your hand palm downwards, the valleys and ridges diverging from the centre, and Exmoor to your hand palm upwards, all the water collected by Exe and Barle and issuing where those two rivers join, two miles below us. People tell us, and no doubt truly, that the old name of Exe was Isca, and far be it from me to dispute it. But that does not forbid my seeing some connection between the first syllable of Exton, Exford, Exebridge and Exwith, and the first part of the names Aix-la-Chapelle and Aix-les-Bains. But I am not a philologist, and the only thing I know to be a maxim among etymologists is that "vowels matter nothing and consonants very little" when you are considering the derivation and meaning of words. I think these valleys must have been in old days exceedingly damp if we consider the position of all the churches along the valleys perched either, as at Winsford, on the top of a knoll, or as at Exford, Exton and Dulverton, a long way up the hill. The monks at Barlynch, of course, kept close to the water for the sake of the trout and the eels to supply them with food on feast days. Besides, the bottom must have been very soft or the great road from Tiverton northwards would have gone along the straight valley instead of up and down over all those hills between Baronsdown and Minehead, going, as it does, east of Exton and Cutcombe. If I may venture to offer a word of advice to any who may not know the district, it would be to urge them not to miss the splendid drive over Winsford Hill and down to Torr Steps, and if it should be a clear day they will not think they have wasted time or strength if they take Wambarrows, the highest point of Winsford Hill, on their return. The view from it is hardly to be surpassed in the West of England. Probably on the way you may catch glimpses of some of the Exmoor pony herd. It is to be hoped, though hardly to be expected, that you may also on your way catch some glimpses of the most characteristic of our West Somerset institutions, the wild red deer. Professor Rolleston, of Oxford, assured me that the normal condition of the Exmoor deer, as indicated by bone and fibre, is far superior to that of the finest Scotch stags or hinds. It may interest you to hear that that grand old man Mr. Bisset, to whom this district owes more, I believe, than it is the least aware of, told me that when he first took up the hounds he killed eight stags and twenty hinds, and in his last year I think it was nearer twenty stags and eighty hinds. But probably the Master or the Secretary of the Hunt has accurate statistics and may be able to correct what is only my recollection of what Mr. Bisset told me. But speaking in this place, I cannot sit down without specially drawing your attention to the family of Sydenham, whose interesting seat, Coombe, you are to visit this afternoon. According to Collinson they spring from the lord of the manor of that name, originally called Sideham, from its position on the side of the river Parrett, near Bridgwater, held by Robert de Sydenham in the time of King John. Collinson traces their connection with various well-known families, such as Hillery of Bathealton, John de Peekstone of Pixton, John Carru, Thomas Perceval, Sir Amias Paulet; and places such as Combe Sydenham, near Stogumber, Orchard Wyndham, Merton Collumpton. The Sanfords of Nynehead, the Walronds of Bradfield, the Williamses of Herrington in Dorset, Floyers of Dorset, and many others can claim connection with them. The beauty and variety of the woods, and the interlacing of the hills as you lose the valleys among them, the luxuriance of the foliage, and the refreshing murmur of the streams, the sparkling stickles and the deep reflections in the pools, and above all the glorious combination of heather and gorse, the plentiful variety of wild flowers and birds and animals which will attract your attention, will, I am sure, combine to give you full compensation for perhaps a slight dearth of objects of antiquarian interest. And I hope that when you leave this district the older members will look back upon their visit here with delight and the younger ones will look forward to the next.

Prebendary Buller proposed a hearty vote of thanks to Sir Thomas Acland for his acceptance of the office of president and the interesting address he had given.

This was seconded by Mr. G. F. Sydenham and agreed to.

Brushford Church.

In the afternoon a large party drove to Brushford Church, which was described by the rector, the Rev. Charles St. Barbe Sydenham, who said the building was stated by the late Mr. Ferrey, diocesan architect, to belong to the Early Perpendicular period, but he (the rector) thought there was reason to believe that an earlier church than the present one stood on the same site. The font, which was particularly noticeable, was of Purbeck marble, and had been restored by Mr. Hems, of Exeter, about eight years since. The font was probably several centuries old. The church possessed an ancient massive oak chest, which during the alterations was put up in the tower and could not now be brought down. The chest was cut out of a single trunk of a tree with hammer and chisel, no saw evidently being used. A set of stocks with graduated holes stood in the churchyard. There was a large oak tree in the churchyard which he calculated must be at least 600 years old. The oak screen, which was a prominent feature of the church, he attributed to the early part of the fifteenth century, and there was a tradition that it was brought from Barlynch Abbey. It had been much mutilated, but enough remained to show what a splendid work of art it was in its original state. The walls of the chancel were taken down and rebuilt in 1872, but the roof, on account of want of funds, was left as it was, although he still hoped to see it restored. The ancient oak seats were worthy of notice, and they were well polished through contact for centuries with corduroy and fustian. The tower arch and west window were thrown open about eight or ten years ago, having been until then covered in with lath and plaster. The church was dedicated to St. Nicholas, and there was a list of the vicars from 1320. The parish register dated from 1558.

Mr. Buckle, the diocesan architect, added a few observations. He said it was a nice little country church, but, setting aside the screen and the font, there was nothing of a special character about it. That part of the country was about the poorest, and the climate was bitterly cold. In such a country as that it was not reasonable to expect that there should have been any great wealth or capacity to spend a great amount of money on the churches. To make up for that they had to remember that they were also a natural history society and that they were going through most gorgeous scenery, swarming with birds and animals not common in other parts of the country.

Coombe Manor.

The members of the Society next visited Coombe Manor, Brushford, an Elizabethan mansion which lies remote from all public roads, and enjoys the distinction of being haunted by a cavalier. It is the ancient seat of the Sydenhams, one of the oldest families in West Somerset. The famous mariner, Sir Francis Drake, married a daughter of the house, although not of the Dulverton branch, but of the branch of Coombe Sydenham, Monksilver, the primitive home of the race. The beautiful rooms of the house, with their ancient oak roofs and plaster ceilings, were much admired, as was the lovely scene visible from the front of the mansion.

The party afterwards returned to Dulverton.

The Geological Features of the District.

The Rev. Prebendary Buller presided at an evening meeting in the Town Hall, Sir Thomas Acland having had to return to Holnicote, where he was entertaining friends from the colonies.

Mr. Ussher gave an interesting lecture on the general geological structure of the district and the south-western counties, with the view that on the subsequent excursions the members of the Society might have some idea of what they would see, that they might understand the different classes of rock, how they got there, and the phenomena displayed by them. Æons of ages ago Dulverton was under the waters of a shallow sea, and the Quantocks and the Brendons did not exist. Estuarine conditions prevailed there, but southwards the water deepened and pelagic conditions prevailed. The rocks of North Devon were formed by coarse sediment, and there was shoal water between Dulverton and Torr Steps, as shown by the sandstone sediment. At that time the geological conditions were fluctuating between the marine and the estuarine, and it was the great red sandstone period. After that the carboniferous rocks were deposited, and these included the Mendips. During that excursion they were going to see some of the most interesting carboniferous rocks in England. They stretched from Dulverton station to Barnstaple. There was a period subsequent to the deposition of the coal measures during which the crust of the earth contracted and shrunk, and this accounted for the mountainous character of that district. Mr. Ussher then spoke of the deposition and denudation of rocks, and described the new red sandstone stretching from Minehead down to the South Coast as far as Torquay. His old chief, Professor Ramsay, used to say that five miles had been taken off the tops of the Mendips by denudation.

Prebendary Buller, at the close of the lecture, said he felt grateful that they had such a man as Mr. Ussher as a member of their Society, and he was thankful to him for having given them in such an interesting manner the results of his many years' study.

A few questions were asked and the meeting then terminated.

The members of the Society on the second day had an excursion to some of the most delightful scenery on Exmoor. The first part of the ride was along the valley of the Barle, past Northmoor, the West Somerset residence of Sir Frederick Wills, Bart., and then, turning to the right, there was a continuous ascent until Exmoor was reached.

Torr Steps.

Torr Steps were reached after an hour and a half. There is a curious legend that the prehistoric structure was built by his satanic majesty for his own use, but the accepted theory is that these stones were set by the Celts of the district, and Mr. F. J. Smell says that these steps over the Barle were in the direct line of march from Barnstaple to important centres further east. There are seventeen spans crossed by granite slabs, and the total length is 180 feet.

Mr. Ussher, F.G.S., who accompanied the party, said worn stones did not reveal age, but having chipped off a piece of the stone he had no hesitation in saying they did not come from a distance, as in the neighbourhood they had much the same kind of stone. It was difficult, however, to fix the age.

In answer to a question whether the structure was British or Roman, the Rev. F. W. Weaver said all the authorities seemed to point to its being pre-Roman.

Mr. Ussher said in that case they would call it Druidic.

Inscribed Stone on Winsford Hill.

Leaving the steps, there was a severe climb to Winsford Hill, and the company halted to inspect the inscribed stone considered to be one of the most important monuments in this part of the country. The inscription is not very plain, but authorities have said it should read "Carataci nepos"—kinsman of Caractacus or Caratacus.

Another halt was at the point known as "The Devil's Punch-bowl," a deep valley in which the visitors were fortunate enough to see a good specimen of the red deer.

The drive through to Exford was of a most enjoyable character, affording magnificent views of moorland, hill and dale.

Exford Church.

There was a visit to Exford Church, the features of which were explained by the rector, the Rev. Mr. Pierson. The style is Gothic, and there is a fourteenth-century window. It was at first dedicated to St. Peter, but had been rededicated to St. Mary Magdalene. At the time of the Reformation a considerable alteration was made in the body of the church, and the tower and arcade of the southern aisle are the only portions of the original church now remaining. The whole of the remainder had been re-erected about forty years ago in churchwarden architecture.

Some curiosity was aroused by an inspection of the churchyard cross, the Rector being anxious to know what form was taken by the top of the structure, which had disappeared, and had not existed in the memory of the oldest inhabitant.

Mr. Buckle, hon. diocesan architect, expressed the opinion that the top was of tabernacle work, and it probably represented Christ on the Cross, with St. Mary and St. John standing on either side.

The Rector remarked that if, in the course of another thirty years, the Society visited Exford, the members must not be shocked if they found the cross restored to the form suggested by Mr. Buckle.

(*To be concluded.*)

HAYLES ABBEY, GLOUCESTERSHIRE.

A CORRESPONDENT of the *Times* says that this year the site of the abbey church of Hayles, about twelve miles from Cheltenham, has been examined by the Rev. W. Bazeley and Mr. St. Clair Baddeley, the latter of whom, in a recent visit to Rome, added to his previous knowledge of Hayles by the examination of important documentary evidence at the Vatican, which fully confirmed the impressions that the two gentlemen named had formed at the outset. One of the most interesting discoveries this year is an old chronicle of Hayles Abbey, written about 1365, shortly after a devastating inroad of the Black Death, but containing little information about the abbey itself. One of the earliest entries tells us that the church and monastic buildings were commenced in 1246, and were so far completed in 1251 that the church was then consecrated in the presence of Henry III., the queen (Eleanor of Provence), Richard Earl of Cornwall (the king's brother and founder of the abbey), his wife (Sanchia of Provence), and a large gathering of knights and ecclesiastics. Ten years later Queen Sanchia died at Berkhamsted and was buried at Hayles. In 1267, continues the record, Edmund (second son of the founder, King Richard), bought a portion of the Holy Blood of Christ, which he gave to Hayles in 1270 with its history, certified by Pope Urban IV. when patriarch of Jerusalem. In September of the following year the abbey church was seriously damaged by fire, and in 1272 King Richard died at Berkhamsted and was buried at Hayles, his third wife (Beatrice von Falkenstein) erecting a "pyramis," or raised tomb, to his memory. In 1277 the restored church, together with the eastern apse and shrine in which the precious blood was deposited, was dedicated by the Bishop of Worcester. In 1295 Earl Edmund gave to Hayles another revered relic—a portion of the true Cross of Christ—but in 1300 Earl Edmund died, and was buried at Hayles in the presence of his cousin and heir, Edward I., and a great concourse of abbots.

Nearly the whole of these statements have been verified by recent discoveries. The moulding of the stonework shows that the church is distinctly of two dates, viz. Early English of circa 1250 and Transitional Early English of circa 1275. In 1271-77 an eastern apse was constructed with five polygonal chapels, two semicircular ambulatories and another structure from a point in which radiated all the rest. This structure is without doubt the base of the shrine in which rested for 200 years the Holy Blood of Hayles and the piece of the true Cross. Some years ago the matrix of the beautiful seal of Hayles was found in Yorkshire. The explanation of its being found in the northern county is probably that Abbot Sagar (in the sixteenth century), when he left Hayles to go to his brother (Otho Sagar, vicar of Warmfield) to die, took the seal with him, and it was subsequently lost.

Considering that the site has been twice dug over for materials to build a home for the Tracy family at Toddington, and that many farmhouses and buildings in the vicinity are built of stone taken from the abbey ruins, it has been an agreeable surprise to find the base of the shrine intact. The beautiful apse in which it stood is believed to have been unique. The two chapels of the eastern apse on the north and the two on the south were floored with late thirteenth-century encaustic tiles bearing the arms of Edward I., Richard, king of the Romans, Queen Sanchia, Edmund, Earl of Cornwall, and the Countess Margaret. On the north side of the high altar, the floor of which remains, was the "pyramis" of the founder and his wife, Queen Sanchia, and on the south side the tomb of Edmund, Earl of Cornwall, and the Countess Margaret. Of Richard's tomb no traces have been found up to the time of writing, but of Edmund's tomb hundreds of fragments have been discovered. Westward of the presbytery is the monks' choir, occupying the crossing and one bay of the nave. There are no traces of a central tower as at Tintern, or a tower at the north end of the north transept as at Fountains, but there are traces of a tower to the west of the north transept—a very unusual place for it. The church with the apse is about 320 feet long—as long as Gloucester Cathedral without the lady chapel.

The work, which has proved so interesting and so fruitful in discovery, is being carried out by voluntary subscription, the treasurer of the excavation fund being Mr. G. M. Currie, 26 Lansdowne Place, Cheltenham, who would gladly receive contributions for the furtherance of the work. Until the end of August, when it will probably be found necessary to cover in the church, Mr. Bazeley and Mr. Baddeley have arranged to act as guides to the abbey and museum to visitors on Thursday afternoons.

A ROMAN KILN.

THE following communication from Mr. Thomas May, of Warrington, appears in the *Liverpool Courier*:—A discovery of a very interesting character, from an archæologist's point of view, consisting of a Roman potter's kiln and a large deposit of potters' waste, was made at Stockton Heath during the past week. This occurred in a sand-pit situated about 40 yards east from the great Roman military highway running north and south, about a quarter of a mile south from the Roman encampment, and at the west end of a row of houses in course of erection by Messrs. Albert & Frederick W. Wright, of Latchford, for Mr. Joseph Twiss. The kiln lies partly in the land of the latter and partly in an orchard occupied by Mr. Booth. To these gentlemen thanks are due for the permission to excavate and to collect specimens. Two days were occupied by Mr. Hallows in uncovering and clearing the flues and chamber, which were completely choked with hard sediment. The walls of the latter were traced by means of their buff fire-clay lining, the inside of the fireplace in particular being vitrified by long exposure to intense heat.

The whole structure, fire-holes (præfurnium), kiln floor and oven (fornax), is built up of well-puddled red clay, moulded into the proper shape, and then, by the application of fire internally and externally, burnt into an intensely hard solid mass. Though it measures about 10 feet long, 6 feet wide and 2 feet 6 inches deep, and was originally divided into four or five separate compartments, yet the walls are continuous and shaped out of one unbroken piece of red terra-cotta. There are three separate fire-holes which unite together at the back to form a sort of dome or reverberator, the original length of the fireplaces being about 4 feet, but the front has been broken down in excavating for about half that length. At the top of the fire-dome there are two holes, 3 inches wide and 1 foot apart, for conveying the heat up through the floor of the kiln into the drying or annealing stove, or kiln proper, the sides and roof of which have entirely disappeared. Only a single worked stone, measuring 12 by 10 by 3 inches, belonging to the upper portion of the kiln, above the level of the perforated floor, was discovered during the excavations.

The length of the kiln and of the fire-holes lies nearly due east and west, and at the south-west angle, at the end opposite to the fire-holes, there was a globular overarched oven, nearly 3 feet in diameter and 20 inches deep, lined throughout with red terra-cotta, backed by about a foot of well-puddled red clay, in a plastic condition, in order to retain the heat. The overarched cover had partly collapsed, the interior being filled with broken fragments of pottery, mixed with black earth. A flue from the back of the fireplace led into a compartment of some kind adjoining the oven, but the walls could not be traced, and the whole rear portion of the kiln was choked with broken pottery, mixed with clay and charcoal in a very compact state to a depth of at least 2 feet below an equal depth of ordinary soil.

Not the least interesting portion of the find was a dense mass of potters' waste, mixed with soft clay and charcoal, at a distance of 4 to 6 feet east from the fire-holes and about 3 feet below the sod. The whole mass was about 5 feet long, 3 feet wide and 2 feet 6 inches deep, and it included fragments of urnæ (jars), mortaria or pelves (mortars), patellæ (dishes), ampullæ (water bottles), urcei (pitchers), &c., in common soft red and black or smoke-tinted (Upchurch) ware, and a few pieces of grey and indented ware. Many of the largest of these fragments have been preserved, and will probably be exhibited separately as specimens of local manufacture in the Warrington Museum, along with drawings and photographs of the kiln and its surroundings.

Not many potters' kilns in an equally well-preserved state have been met with in Roman Britain, and no other of similar shape and material has been recorded. In these respects the discovery is therefore unique.

In this locality, underneath about 3 feet of soil, there is a layer of about equal thickness of bright yellow sand, in which the kiln is built, and beneath the floor of the kiln there is a deposit, about 18 inches thick, of hard boulder clay, overlying a bed of the very dark red sand used by iron moulders in and about Warrington for generations. Both kinds of sand were used along with the clay by the Romano-British potters. Geologically these deposits belong to the so-called middle sand and gravels of the drift.

SOCIETY OF ART MASTERS.

THE twelfth annual general meeting of the members of the Society of Art Masters was held on the 2nd inst. in the lecture theatre of the Victoria and Albert Museum, South Kensington. The chairman, Mr. W. Wallis, in the course of his presidential address, pointed out that the Society had, unlike others of a similar nature, arrived at the period of strong and robust maturity. He was sorry to be unable to announce this year any such honour as was last year conferred upon the Society, when the Prince of Wales consented to become its honorary president. A petition was prepared asking that they might be permitted to prefix the word "Royal" to the name of the Society, but in consequence of so many applications of a similar nature the honorary president was unable to entertain the proposal. Parliamentary action in connection with their work had centred in the Education Bill, the further progress of which was deferred until next year in order that it might be considered during the recess. The most satisfactory feature of the Bill was the provision making it compulsory on local authorities to spend the whole of the beer money for educational purposes. But therewith arose the anxiety as to the proportions in which the money would be allocated, whether art instruction, hitherto insufficiently subsidised, was to gain or suffer. The importance of art instruction in relation to industries appeared to be most inadequately appreciated by Parliamentarians, and it was of the greatest necessity that their Society should do their best to remedy such a state of things. The tendency to look upon schools of art as separate institutions was distinctly on the decline, and they were more and more becoming branches of large schools appearing under the fascinating name of technical schools. There was no want of evidence that in many places workmanship was regarded with greater favour than draughtsmanship. Lectures now appeared to be accepted as the substitute for practical instruction in art. It was essential that governing bodies should include experts, and that art masters should have entire control over their departments in order to check retrograde modern tendencies. He urged upon art masters the necessity for continuous study if they desired to raise the status of their profession. The report of the Council and the statement of accounts having been unanimously adopted, Mr. Shelley was elected chairman for the ensuing year, and Mr. Stevenson vice-chairman. After the election of the Council the meeting proceeded to consider a number of subjects of interest to and affecting the position of art masters, such as the Education Bill, the limitation of the work of lower-grade schools, geometry and art certificates, the alterations in the new directory, and the maximum limit of age for the appointment of art inspectors of the Board of Education.

LANCASHIRE AND CHESHIRE ANTIQUARIAN SOCIETY.

THE members of this Society enjoyed on Saturday last their second country excursion, the party numbering nearly thirty, which was under the leadership of Mr. Redford, in the unavoidable absence of Lieut.-Col. French. The purpose of the visit was to see many objects of interest left unseen last year, and also to see a bit of Roman-made road—Watling Street and the "Cross" which stands upon it at Affetside, near the boundary line of Tottington. The "Cross" so marked on the Ordnance map seems more of a "pillar"; the top portion may have become dismantled. The origin of this ancient landmark has become obscure through the lapse of time, which gives rise to many theories as to the real cause of its erection. On arriving at Bradshaw village the party first proceeded to Affetside by the field way, a distance of 1½ miles, and were most courteously received at the ancient landmark by Captain Hardcastle, who then assumed the leadership. Captain Hardcastle spoke a few words from the steps as to the cross standing half-way between London and Edinburgh, according to old tradition. Owing to their late arrival the party had to curtail the circuitous route they had intended, which prevented their seeing a section of Roman pavement in the direction of Cockey Moor. Captain Hardcastle next called at the Pack Horse to see and show the party a skull, alleged to be that of Whowell, who executed the Earl of Derby in 1651. On making inquiry, however, it was found that the house had changed hands, and the late tenant had taken the once distracted head away. Their attention was next called to Slack Lane, which runs from Affetside Road to near Bradshaw Hall, which is said to be an old pack way, and here a portion of Roman pavement, laid diagonally, was shown to them, which appeared to be like small square flags of a very hard material, and not obtainable anywhere in that locality. Another short walk brought them to Bradshaw Hall, where the party rested from their labours after a somewhat stiff walk, rendered a little more fatiguing by the closeness of the afternoon. It was stated there was a base of a cross which, according to the Ordnance Survey of 1850, stood near Kershaw's buildings on the road towards the Bull's Head, but has been removed to a field near. There was not time, however, to view it, and it still remains to be seen whether it is a "pedestal of a stone cross" as indicated on the map, or a base of a cross of another type. On Captain Hardcastle's invitation the party were most hospitably entertained to tea in the historical dining-room, after which a short paper prepared by Mr. Redford of his theory of the Affetside Cross was read, in which the writer, in the absence of any evidence to the contrary, inclined to the belief the cross was a boundary stone or cross of the Crusaders' period (1096-1272), as it was customary for ancient landowners to define their manors in that way. Sir William Bradshaw, the once head of that ancestral house, was a great Crusader, and fought in the holy wars. Randulph Blundeville was also a great Crusader, and is believed to have erected the "seaven holy or St. John's crosses" which once encircled Oldham—producing a copy of a very ancient plan. Many of the followers of this great landowner resided in this district. Such crosses were stated by a witness at an Inquisition held in Bolton on October 8, 1619, to be "bounds and meares." About eighteen ancient and noble families resided in or near Bolton at this time (1619), many of whom defined their possessions by boundary crosses. A well-known antiquary, who has devoted much time and research to the subject, considers the boundary stones in this district as the "key" of the position. They were on lands between the Ribble and the Mersey, which Randulph Blundell owned. A discussion took place, in which Captain Hardcastle, whilst thanking the writer for his valuable paper, which threw light on ancient crosses, was of opinion that Affetside Cross was really a market cross, as he had heard of fairs being held there and of the road being widened and set further back in the field than what it is at present. Mr. A. Nicholson shared Captain Hardcastle's opinion. The subject is worthy of full inquiry and more light should be thrown upon it, until the mist of ages which shroud these ancient landmarks is cleared away. A most cordial vote of thanks was accorded to Captain Hardcastle for his hospitality and kindness, and to the leader for his excellent paper and services as leader, the party being then conducted over the fine old historical house of the Bradshaws. They viewed the interior thoroughly, with its carved oak bedsteads, oak panelling, paintings and various objects of interest. Then the exterior of the house and grounds were fully explored, the latter being in the best condition possible, a short walk through the property bringing to a close a day enriched with very pleasurable reminiscences.

TESSERÆ.

Bird's-Eye Views.

THE so-called bird's-eye views of buildings are not only most awkward, disagreeable and unnatural representations in themselves, but are altogether superfluous, for a building can be shown more accurately by other means. Objects shown in bird's-eye views, whether buildings or landscape, or both combined, appear as they would do if viewed from some lofty station, from the summit of a building, from a terrace, tower or any other eminence; but still the spectator is supposed to be looking in a straightforward direction, and the plane of the picture to be perpendicular to the natural horizon. Consequently only distant objects can thus be shown, because when looking in that direction a person cannot possibly see objects immediately beneath him. He can do that only by looking down upon them; but in a picture there can be but one instant of view, nor can the point of sight be shifted at pleasure by the eye being directed upwards or downwards so as to alter the field of vision and take different objects in succession. Whatever is shown in a picture must be supposed capable of being embraced by the eye at once, although in practice some little degree of license in this respect is occasionally allowable. The method of representation might nevertheless occasionally be found useful as explanatory diagrams or drawings, whenever it should be required to show the effect of an interior as beheld from a lofty upper gallery, not viewed in a cross or straightforward direction, but by looking down into the lower area of the apartment. This prone perspective might also be applied for the purpose of giving a map-like yet graphic view of a group of buildings and their locality. As a picture, indeed, such view would be extravagant, although as a picture-map it would have something to recommend it. Even the more usual kind of bird's-eye perspective, or view with a very elevated horizon, is by no means the best calculated for picturesque effect, since it brings those parts of an edifice into view which are intended to be concealed, and otherwise greatly takes off from the architectural effect, causing the building so viewed to appear too much like a small model placed upon a table.

Nollekens in Westminster Abbey.

Whilst Nollekens was examining in Westminster Abbey the site for the sumptuous monument of the three commanders who fell in Rodney's battle Smith accompanied him. The sculptor was fortunate in a pupil who modelled and stood for models of gods as well as men, ran errands, soothed difficult customers, made ribbon garlands for the neck of his mistress's dog, attended his master on all excursions of pleasure or of art, and finally, when the grave had closed over him and his will was read, lifted the pen and filled more than a volume with anecdotes of him and his wife, his boy Tom, his maid Bronze, and his dogs Favourite and Daphne. With this pupil by his side, and his thoughts on the future monument, the sculptor addressed himself to all who approached him. Catling, a verger, came, and the following curious conversation ensued :— "Nollekens : Why, Catling, you seem to be as fond of the Abbey as I am of my models by Michel Angelo. Pray why do you suffer the schoolboys to chalk the stones so ? I have been spelling pudding, grease, lard, butter, kitchen-stuff, and I don't know what else. Catling : Why, thereby hangs a tale. You must know that the Dean married a woman—here one of the clergymen appeared, and the conversation took a different turn. Nollekens : My wife bid me ask you where the Cottonian Manuscripts are kept. Catling : In Ashburnham House, Little Dean's Yard ; it has a stone entrance, designed by Inigo Jones, and Dr. Bell lives there, who was chaplain to the Princess Amelia. Nollekens : Ah ! I know ; he was robbed by Sixteen String Jack in Gunnersbury Lane. Well, my wife wants also to know what you have done with the wooden figures in wax masks, all in tattered silk, which the Westminster boys called the ragged regiment—she says they were borne before the corpse formerly. Catling : They are put up in those very narrow closets, between our wax figures of Queen Elizabeth and Lord Chatham, in Islip's Chapel, where you have seen the stained-glass of a boy slipping down a tree and the eye slipping out of its socket. Nollekens : What, where the poll parrot is ? I wonder you keep such stuff. I don't mind going to Mrs. Salmon's waxwork, where Mother Shipton kicks you as you go out. You should not have such rubbish in the Abbey—and then to take money for this foolish thing and the other foolish thing, so that no one can look at the works of art without being bothered about Queen Catherine's bones, the Spanish ambassador's coffin, the lady who died by pricking her finger, and then the begging-cap called General Monk's, that people must put money into. You had better bid the Dean see that his monuments don't want dusting—and look after the Westminster boys and not let them break the ornaments off to play at sconce within the cloisters. Now at Rome and all other churches abroad an artist may go in and draw, but here he must apply and wait, and then be brought up like a criminal before the Dean. Stothard, the Academician, had much trouble with the man, and was talked to about the proper fees. Bless my heart, it is all very bad." During this conversation Gayfere, the Abbey mason, a worthy and clever man, came up and said, "Ah ! Mr. Nollekens, and you are here ? Nollekens : Here, yes. Why do you suffer that Queen Anne's altar to remain here in a Gothic building ? Send it back to Whitehall whence it came. And why don't you hinder the Westminster boys from breaking off noses and fingers from the statues ? Gayfere : What an ungrateful little man you are—don't it give you a job now and then ? Did not Mr. Dolben have a new nose put upon Camden's face the other day at his own expense ? Nollekens : What have you done with the old Gothic pulpit ? Catling : It has been conveyed to our vestry, the chapel of Saint Blaize, a curious part of the Abbey, and very dark. There is an ancient picture on the east wall of a figure which can be made tolerably out. Did you ever notice the remaining colours of the curious little figure painted on the tomb of Chaucer ? Nollekens : No, that's not at all in my way." Here a Mr. Champneys joined them, and said, "Mr. Nollekens, can you tell me the name of the sculptor who executed the bas-relief of Townshend's monument ? The composition and style of carving are admirable, but I am sorry to see that some base person has stolen one of the heads. Nollekens : That's what I was talking about ; Dean Horsley should look after the monuments himself—hang his waxworks. Yes, I can tell you who did it—Tom Carter had the job, and one Eckstiene modelled the tablet part—it is very clever. I don't know what else he has done besides. Bartholomew Cheney modelled and carved the figures of Fame and Britannia for Captain Cornwall's monument. Sir Robert Taylor paid him four pounds fifteen shillings a week."

Correspondence

[*The Editor does not hold himself responsible for opinions expressed by the writers.*]

Competitive Designs for Presbyterian Assembly Hall and Central Buildings, Belfast.

Sir,—Will you allow me space to describe the treatment that I have received in connection with the above competition ?

I sent in designs at the time specified in the conditions, and it was stated that a decision would be come to in June. I waited till the first week in July before writing to Mr. W. D. Eakin, 12 May Street, Belfast, and some time afterwards received a circular as follows :—

"12 May Street : June 21, 1900.

"Dear Sir,—I have been instructed to return the plans lodged by you in the above competition. The committee has awarded the prizes in accordance with the decision of Sir Thomas Drew. Your design was not placed by him one of the first three.—Yours faithfully,

"W. Todd Martin."

Since July 1 I have written four times asking for the return of my case, nine stretchers and drawings. On the 8th inst. I received the nine sheets of drawings and stretchers tied to a very rough frame in one side of the stretchers, but without the case. One of the sheets of drawings is torn and three or four large holes in it, and some nails driven through the stretchers and paper. May I ask other competitors if they have received similar treatment, and is there no redress for such wilful damage and carelessness ?—Yours, &c.,

A Competitor.

GENERAL.

The Prix de Rome in the section of architecture has been awarded to M. Paul-Marie Bigot, born in 1870 at Arbel (Calvados), a pupil of MM. André and Lalou. The "premier second grand prix" has been gained by M. Joseph Dernard, born in 1870 at Clermont-Ferrand, pupil of M. Pascal. The "deuxième second grand prix" was won by M. Paul Lemaresquier, born in 1870 at Cette, pupil of M. Lalou.

Lady Gwendolen Cecil has accepted the office of president of the Hertfordshire Art Society, hitherto held by her mother, the late Marchioness of Salisbury.

Excavations at Baalbek are about to commence under the direction of German officials, who are expected to be engaged there for about three years.

The Society of Arts is about to set up one of the Society's memorial tablets on the house 54 Hunter Street, Brunswick Square, W.C., in which John Ruskin was born. The necessary permission has been obtained from the ground landlords (the board of the Foundling Hospital) and the lessees.

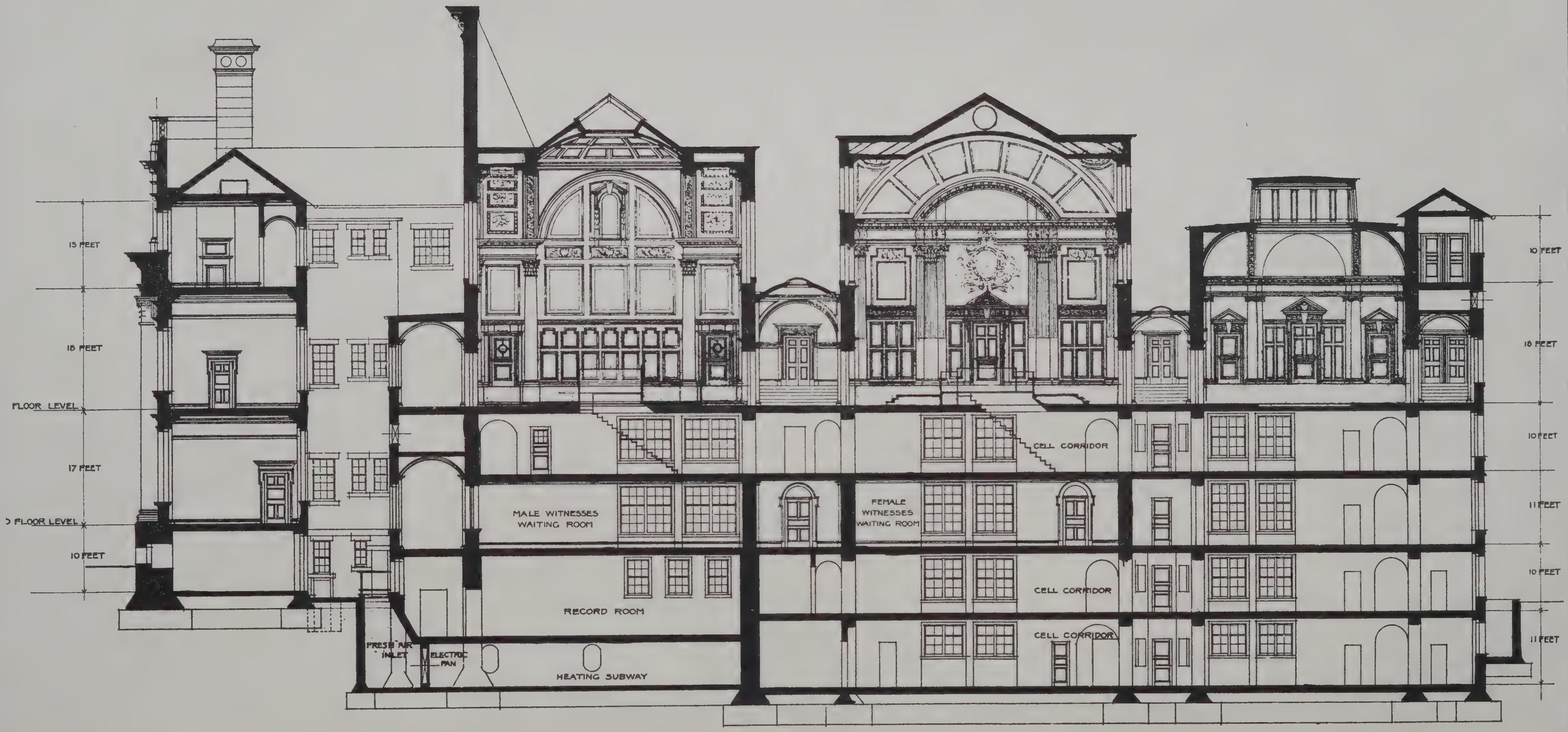
The First Commissioner of Works has announced that the purchase of property, with a view to creating a clear space of not less than 40 feet wide to the west of the National Gallery, has been agreed to in principle by the Government and the vendors, and negotiations are now in progress as to the settlement of the price to be paid. The purchase should be shortly completed.

A New Music Hall is to be erected in Stanhope Road, Portsmouth, by the shareholders of the Empire Palace.

M. Charles Victor Bartaumieux has been awarded the gold médaille d'honneur of the Société Centrale des Architectes Français.

The Académie des Beaux-Arts have published the result of the competition for the Prix de Rome in sculpture. The first prize has been awarded to M. Paul-Maximilien Landowski, born 1875, a pupil of M. Barrias. M. Ernest-Auguste Legrand, pupil of M. Jules Thomas, won the first of two second prizes, the other being won by M. Raymond-Joseph-Louis Sudre, born 1870, pupil of MM. Falguière et Mercié.

OF THE
UNIVERSITY of ILLINOIS



SECTION ON LINE C-C

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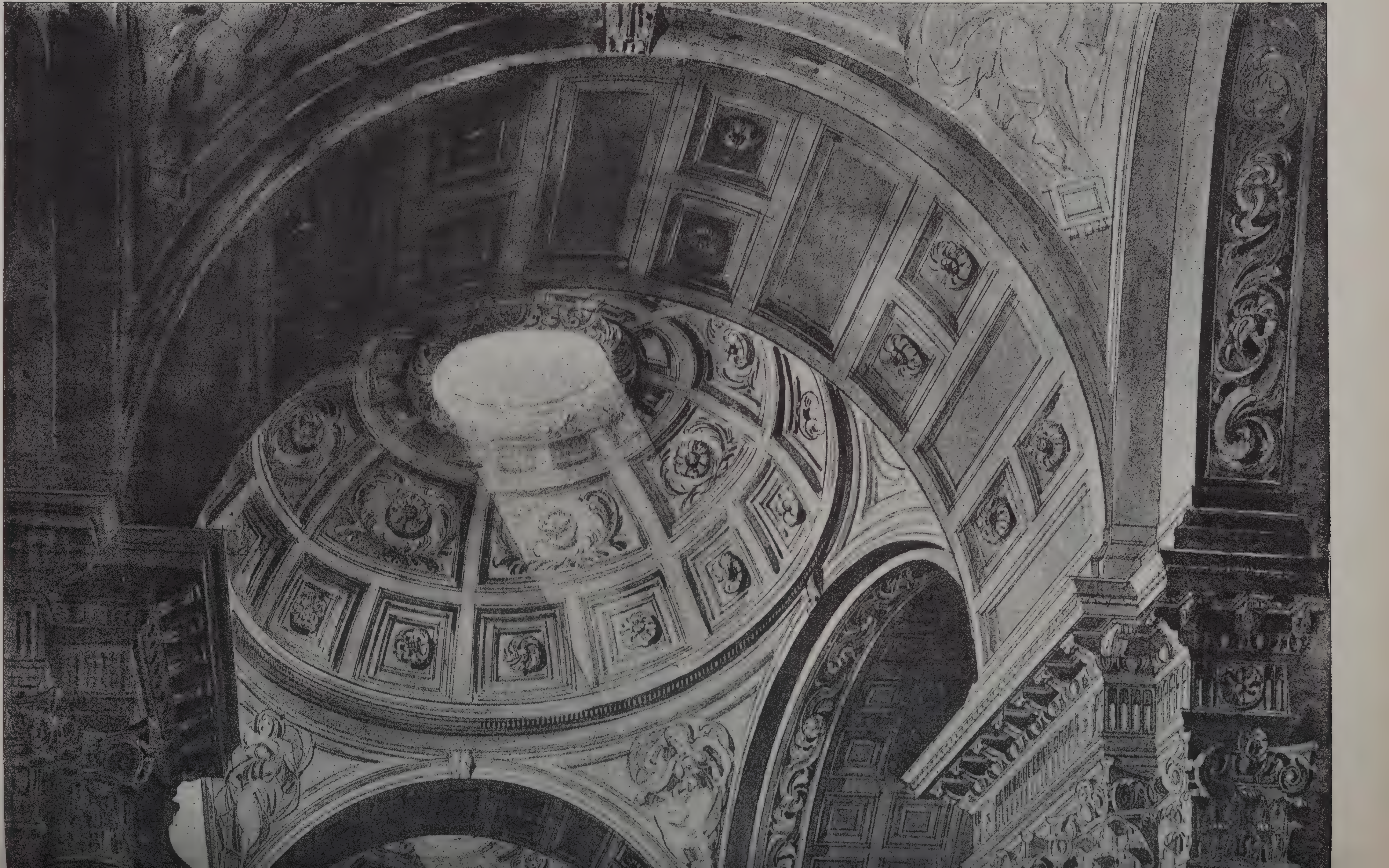
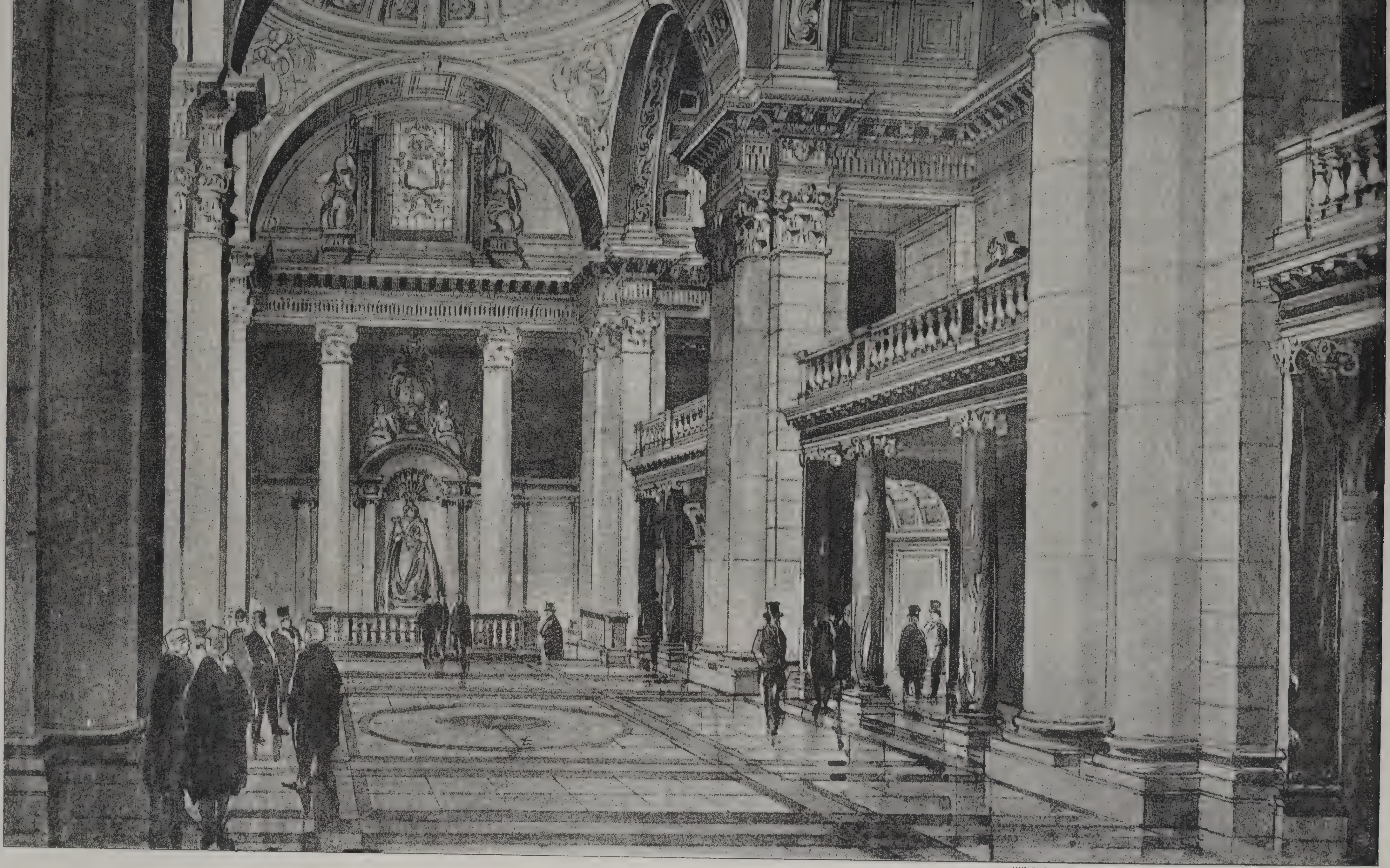
DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY.

The Architect, Aug 10th 1900.





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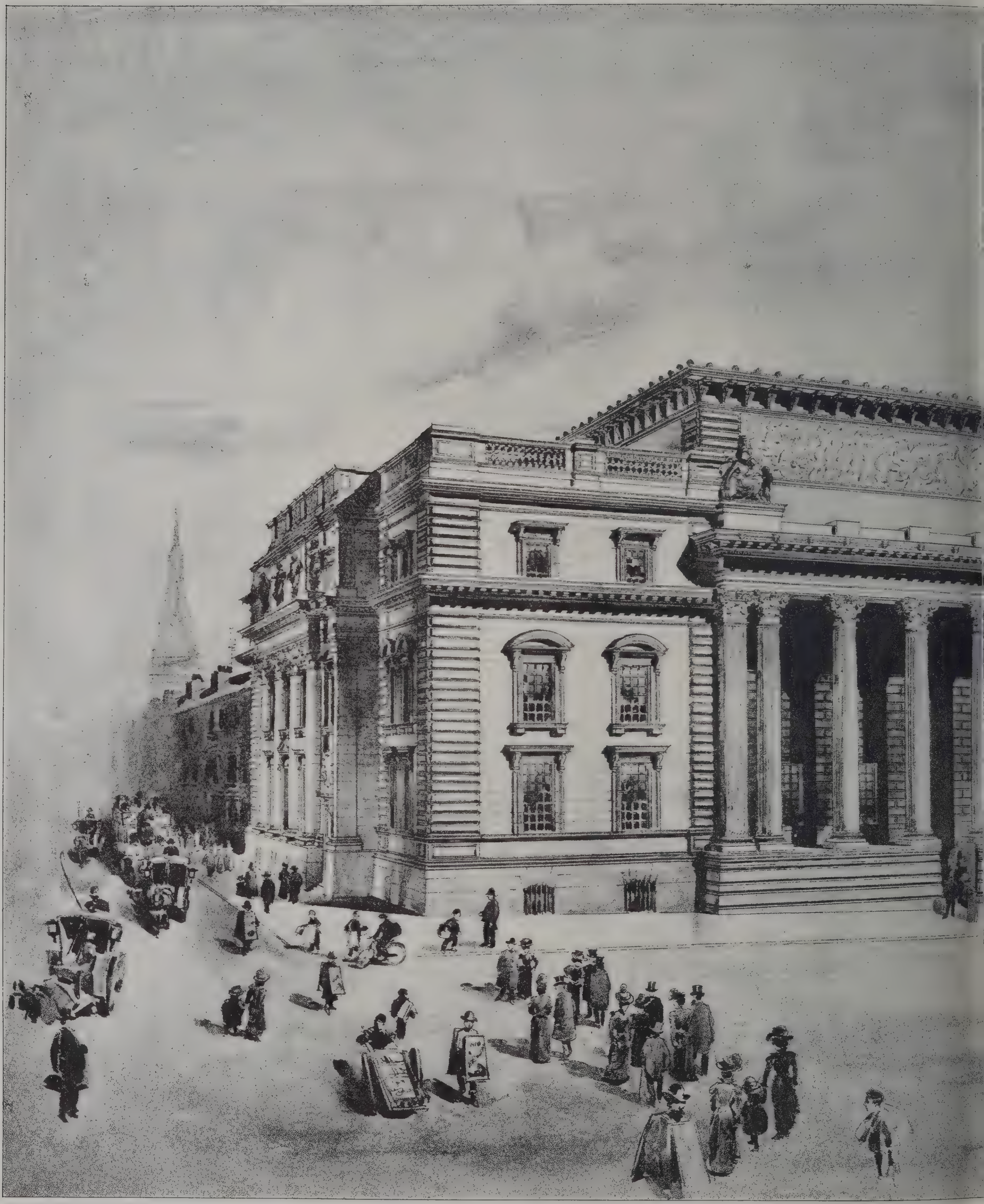
DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY.

PUBLIC HALL.

By J. M. BRYDON, F.R.I.B.A.



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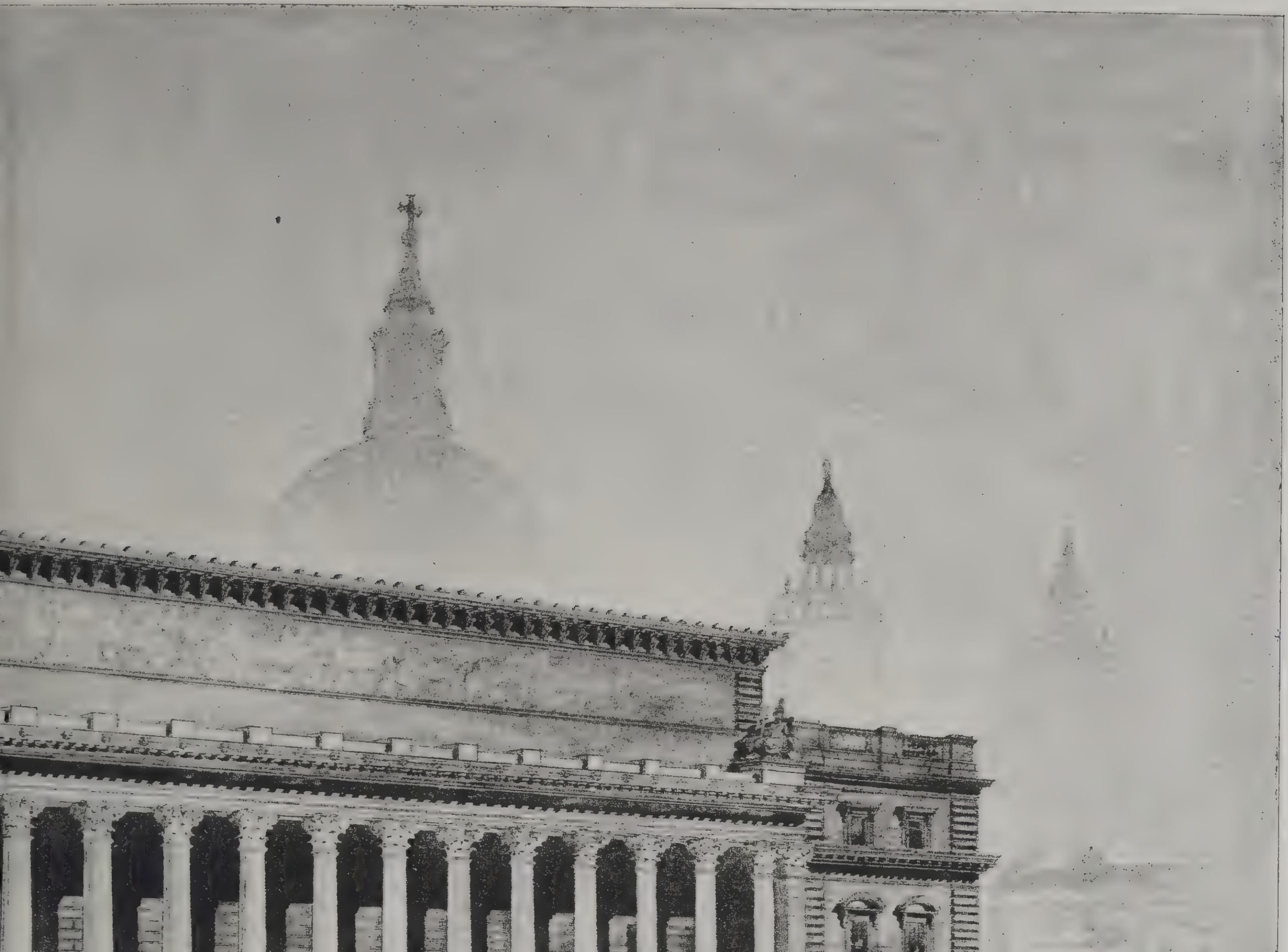

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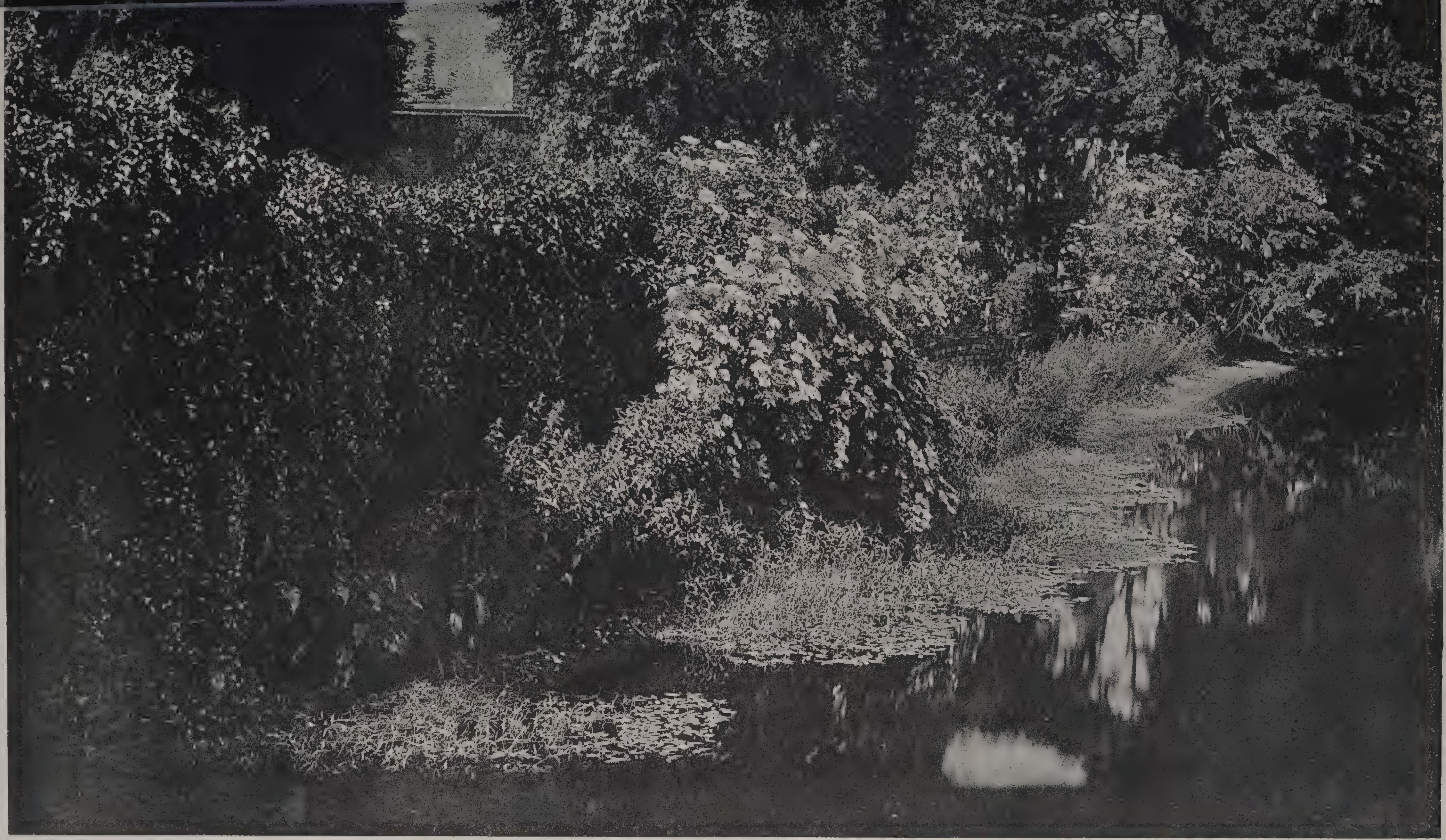
NS HOUSE, OLD BAILEY.

VIEW.

F.R.I.B.A.



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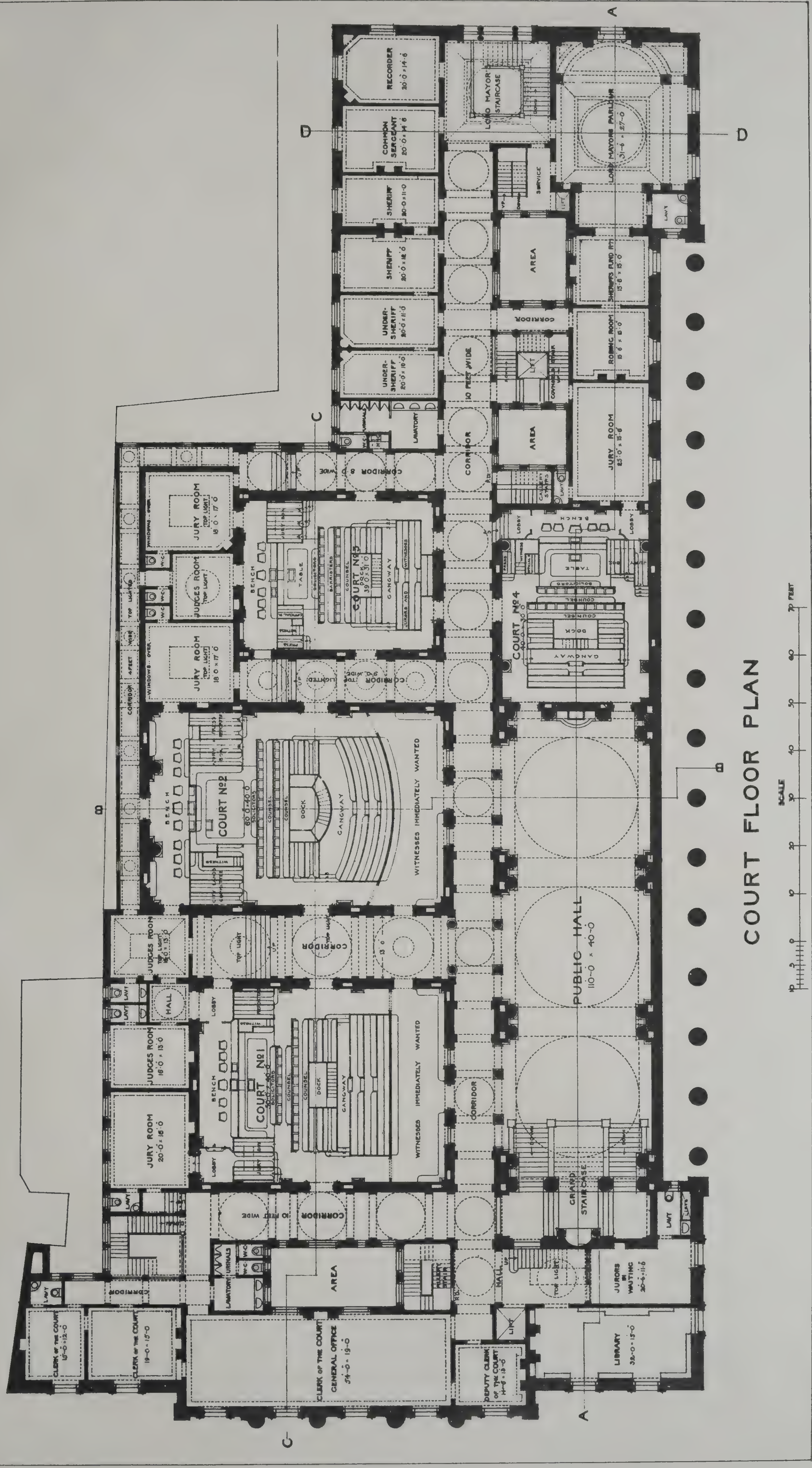
CATHEDRAL SERIES, No. 290.—LICHFIELD: VIEW FROM WEST.
(SHOWING "THE LADIES OF THE VALE.")


RECORDER 20'-0" × 14'-6"
COMMON SERGEANT 20'-0" × 14'-8"
SHERIFF 20'-0" × 11'-0"
SHERIFF 20'-0" × 18'-0"
UNDER-SHERIFF 20'-0" × 11'-0"
UNDER-SHERIFF 20'-0" × 18'-0"
LORD MAYOR'S STAIRCASE
LORD MAYOR'S PARLOUR 31'-6" × 27'-0"
SERVICE
LIFT
LAVY
AREA
SHERIFF'S FUND RM 15'-8" × 15'-0"
CORRIDOR
ROBING ROOM 8'-6" × 8'-0"
LIFT
COUNSEL'S STAIR
10 FEET WIDE
CORRIDOR
LAVATORY
JURY ROOM 25'-0" × 15'-6"
GALLERY STAIRS
CORRIDOR 8'-0" WIDE
JURY ROOM 18'-0" × 17'-0"
JUDGES ROOM
JURY ROOM 18'-0" × 17'-0"
COURT No 3 39'-0" × 31'-0"
BENCH
TABLE
BARRISTERS
COUNSEL
GANGWAY
WITNESSES
JURORS AND
COURT No 4 40'-0" × 30'-0"
BENCH
LOBBY
TABLE
SOLICITORS
COUNSEL
DOCK
GANGWAY
CORRIDOR 9'-0" WIDE (TOP LIGHTED)
CORRIDOR 8 FEET WIDE TOP LIGHTS
WINDOWS OVER
COURT No 2 60'-0" × 40'-0"
BENCH
SOLICITORS
COUNSEL
DOCK
GANGWAY
WITNESSES IMMEDIATELY WANTED
CITY LANDS COMMITTEE
PUBLIC HALL 110'-0" × 40'-0"
JUDGES ROOM 18'-0" × 13'-0"
TOP LIGHT
CORRIDOR
13'-0"
HALL
LAVY
JUDGES ROOM 16'-0" × 13'-0"
JURY ROOM 20'-0" × 16'-0"
COURT No 1 50'-0" × 40'-0"
LOBBY
BENCH
SOLICITORS
COUNSEL
DOCK
GANGWAY
WITNESSES IMMEDIATELY WANTED
CORRIDOR
GRAND STAIRCASE
CORRIDOR 10 FEET WIDE
LAVATORY
URINALS
W.C.
AREA
GALLERY STAIR
HALL
TOP LIGHT
JURORS IN WAITING 30'-0" × 11'-6"
LAVY
LIBRARY 32'-0" × 15'-0"
LIFT
CLERK OF THE COURT 15'-0" × 12'-0"
CLERK OF THE COURT 19'-0" × 13'-0"
CORRIDOR
CLERK OF THE COURT GENERAL OFFICE 34'-0" × 19'-0"
DEPUTY CLERK OF THE COURT 14'-0" × 13'-0"
A
A
B
B
C
C
D
D
SCALE
10 5 0 10 20 30 40 50 60 70 FEET

COURT FLOOR PLAN

DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY.

By J. M. BRYDON, F.R.I.B.A.

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The Architect.

THE WEEK.

An interesting example of the procedure adopted in the Scottish Dean of Guild Courts has been afforded in Rutherglen, near Glasgow. A builder lodged plans of two villas and sought sanction of them. The landlord raised an objection on the ground that the plans did not represent a villa, but a residence in flats. The Dean of Guild considered the objection was made out, so he declined to sanction the plans and ordered the builder to pay costs. What is interesting to strangers is the note appended to his decision, in which the Dean explains the reasons by which he was guided. He says:—"From the expert evidence before the Court, and in view also of the cases quoted by the parties' agents, I have no hesitation in saying that the word 'villa' in a feu contract such as this one seems to me to imply a single residence for the use of one family, but that does not mean that it might not be capable of being used by more than one family. Occupancy is pertinent in this case only in so far as the structure is affected. In fact, we do not require to consider occupancy in this title except in the prohibition clause referring to business premises. One might think that it is implied, and I have little doubt but that was the intention, and if the structure of this building shows that it is capable of occupancy by one family, and conforms to the other requirements of a villa, I am afraid we cannot but grant the prayer of the petitioner. But does this structure conform to the requirements of such a house? I think not. Each building, as the plan shows, is surrounded by unoccupied ground. That is the only thing about it that is in conformity with the descriptions of what a villa ought to be when not qualified by such word as semi-detached or double villa. In short, the construction of this building does not in my opinion show that it is capable of being occupied by one family, and therefore cannot be called a villa." In the Dean's explanation it is easy to see a survival of the influence of the old Roman law. The Villa Urbana is generally considered to have been the residence of one individual with his family and servants. The word does not everywhere retain so exclusive a signification, for in our days in London it is not impossible to obtain unfurnished rooms in villas with high-sounding names. But Scotch judges seek after precision in language, and amateurs in Dean of Guild Courts are proud to imitate the example set by the Court of Session.

There is much to be said in favour of entrusting parochial records to the care of the incumbent. It is necessary, however, that the care should not be merely nominal. The report of the Deputy-Keeper of the Public Records in Ireland suggests with what ease documents of the kind can be lost. A register of the parish of Dunkerrin, co. Tipperary, is no longer to be found. Inquiries for it in all likely quarters have been fruitless. In 1879 the incumbent was charged with the care of the documents. Every year since, as required by law, the successive incumbents have reported that the records were all safe. Yet apparently all this time the earliest volume described in the order was missing, and the loss would be unobserved if a private applicant had not given information of its absence. It is suggested that the safety of the older parish records, in Ireland at least, might be secured without to any large extent defeating the intention of the Act of 1876 by encouraging incumbents charged with the custody of records under retention orders, while they retain the later and more frequently consulted books, say, for the last seventy years, to deposit in the central office in Dublin the earlier volumes, which need more care, are of less use locally, and are more difficult to search and to read by persons inexperienced in consulting records. It appears that the number of retention orders, permitting the retention of parish records in approved receptacles in their respective parishes which have been granted by the Master of the Rolls is 586, of which 560 were in force at the beginning of 1900. But it is uncertain how many of the parishes resemble Dunkerrin and are deprived of the most valuable of the volumes. The bishops and higher ecclesiastical authorities would be wise to recognise the possibilities of abstraction of records, and if they cannot prevent loss they should take steps to make it more easy to define the time when the disappearance occurred.

The meetings of the section of Mechanical Science when the British Association assembles at Bradford will be under the direction of Sir Alexander Binnie, the engineer to the London County Council. One of the papers read will be by Mr. J. H. Glass, on "Proposed Railway Construction in China." Traction on roads is now exciting more than usual attention owing to the variety of vehicles which are employed. Professor Hele Shaw's paper on "Resistance in Roads" will give a condensed account of what is known on the subject. Allied to it are papers on "Resistance and Acceleration of Trains—Measurement of the Tractive Force" by Mr. A. Mallock, "Liverpool and Manchester Electric High-Speed Railway" by Sir William Preece, and on "The Automobile for Electric Street Traction" by Mr. T. G. W. Aldridge. The local waterworks will be described by Mr. Watson, C.E. Professor Beaumont and Mr. Barker will describe some of the mechanical and photographic processes employed in designing textile fabrics in Bradford. Electricity will obtain due prominence. Papers will be read by Mr. Gibbings dealing with the "Design and Location of Electric Generating Stations," and by Mr. Barker on "A Maximum Demand Meter." Professor Sylvanus Thompson will also give a lecture to the working classes on "Electricity in the Industries." The molecular properties of steel will be investigated in Professor Arnold's paper entitled "The Internal Architecture of Steel." Mr. E. K. Clark will deal with "Shop Buildings." In the Anthropological Section Mr. Arthur J. Evans will describe the "Prehistoric Pictographic System of Writing" which was used in Crete and elsewhere in Greece in the Homeric age.

Announcements have been so often made about a definite settlement of the Museum of Decorative Art in Paris, nobody can believe in the possibility of any arrangement of the valuable objects which have been collected until they can be seen by the public under the same conditions as the works in the ordinary public museums. The general scepticism is to be excused, after all that was for years said about setting up the museum on the Quai d'Orsay. It has now, however, been stated that the collections will be visible in that part of the Louvre known as the Pavillon de Marsan early in the coming year. It is announced that M. Redon, architect, has been entrusted with the arrangement, and that the plans he has prepared are forthwith to be carried out. The part of the great building assigned to the new museum is near the Rue de Rivoli, between the gateway opposite the Rue d'Echelle and the Ministry of Finance, and will afford sufficient accommodation for the numerous treasures which are at present available. Recently an invaluable collection of wood-carvings of the Mediæval and Renaissance periods has been presented to the museum, and will probably occupy the most important position in M. Redon's galleries.

The erection of the new Technical Institute was considered by the Eastbourne Town Council at their last quarterly meeting. The committee proposed to meet Mr. Philip A. Robson, the author of the successful design, before finally engaging him, in order to discuss various suggestions which had been made, and recommended that five members of the Council should be appointed to attend the meeting of the committee and the architect. The recommendation was agreed to. With regard to a quantity surveyor, the committee considered that it was undesirable for the architect to prepare his own quantities, and that the Council be recommended to authorise the committee to advertise for and appoint a surveyor. Some of the members of the Council were of the opinion that the appointment of a quantity surveyor before the plans were prepared was premature, and the proposal was therefore omitted. Many people in Eastbourne consider that the opportunity should be utilised to erect a more ornamental building, and that a larger sum than 20,000*l.* might well be expended on the Technical Institute.

ERRORS IN TENDERS.

A CONTRACTOR'S case which has been before the American courts for several years has advanced another stage, but it is doubtful whether the final goal has been reached. The courts might be playing a game of see-saw all the time, for the decisions were alternately on different sides. The case raises the question, To what extent are contractors liable for clerical errors in tenders? It also exemplifies the risks of preparing tenders in a hurry and sending them in unchecked.

In 1892 the city of Rochester decided to have a conduit of about 30 miles in length constructed, partly of masonry and partly of steel pipe. The work was described in detail, for the specifications filled 300 pages. A firm known as the Moffett, Hodgkins & Clarke Co. resolved to compete, and sent their engineer to make inquiries and to prepare tenders. It was admitted that in the effort to do what was required in a few days he became nervous and confused. Earthwork he priced at 50 cents per cube yard instead of 70, and the error in that item alone amounted to 36,800 dols. For tunnelling 1·50 dols. was inserted instead of 15 dols., the amount being 27,000 dols. too low, and the two errors came to 63,800 dols. A bond of 90,000 dols. had to be lodged with the tenders.

As there was informality in the tender, which was announced by the chairman of the Waterworks Board, the tender of the company should have been set aside, but it was read, and then the Board was notified of the errors in the pricing. No attention appears to have been given by the Board to the information. The company were subsequently informed that although their tenders were the lowest in both sections, the contract for the masonry was to be given to another firm. The company protested against the arrangement, and insisted on having both sections entrusted to them at corrected prices, or to be allowed to withdraw their tender. The Rochester Corporation, however, declared the company to be the accepted contractors for one route, and at the prices which were declared to be erroneous. The company immediately took steps to prevent any use being made of the bond of 90,000 dols.

In the first Court where the action to regain possession of the bond, which was equivalent to an equal sum in cash, was tried judgment was given for the company; in the Appeal Court it was set aside in favour of the city of Rochester, and the Supreme Court has adopted the first decision. The contractors have so far two judgments in their favour as against one for the Corporation.

A part of the judgment delivered in the Supreme Court relating to mistakes in contract deeds will show what American judges believe is the law on the subject:—"The reformation of written contracts for fraud or mistake is an ordinary head of equity jurisdiction. The rules which govern the exercise of this power are founded in good sense, and are well settled. Where the agreement as reduced to writing omits or contains terms or stipulations contrary to the common intention of the parties, the instrument will be corrected so as to make it conform to their real intent. The parties will be placed as they would have stood if the mistake had not occurred. The party alleging the mistake must show exactly in what it consists and the correction that should be made. The evidence must be such as to leave no reasonable doubt upon the mind of the Court as to either of these points. The mistake must be mutual, and common to both parties to the instrument. It must appear that both have done what neither intended. A mistake on one side may be a ground for rescinding, but not for reforming a contract. Where the minds of the parties have not met there is no contract, and hence none to be rectified."

The judgment we have quoted will commend itself to English lawyers as well as to contractors. It is no more than application of equity to a case where error was not unlikely to occur in the excitement of preparing tenders in a strange place and when assistance was not available. It was, however, impossible to amend the tender and to place the parties on the footing that was desired by the Court. Somewhat precipitately, as it appears to anybody writing at a distance, the Rochester Water Board entered into a contract for a part of the work with a different firm. The only course, therefore, open to the Court was either to agree to the application of the company and to restore the bond, or to compel the company to execute the work at the prices which were acknowledged to be erroneous. To decide in favour of the Rochester Board would be to establish a precedent of which the effect was thus described by a judge in the first Court where the case was heard:—"If the defendants are correct in their contention there is absolutely no redress for a bidder for public work, no matter how aggravated or palpable his blunder. The moment his proposal is opened by the executive Board he is held as in a grasp of steel. There is no remedy, no escape. If, through an error of his clerk, he has agreed to do work worth 1,000,000 dols. for 10 dols., he must be held to the strict letter of his contract, while equity stands by with folded hands and sees him driven into bankruptcy. The defendants' position admits of no compromise, no exception, no middle ground."

It would appear that the opinion of American civil engineers was in favour of the Board, and against the contractors. They believed, we suppose, that the error was intentional, and that the company had some ulterior purpose which was not revealed. When the case came on in the Appeal Court counsel for the Waterworks Board contended that tendering was a game of strategy, and low prices were put down for certain classes of work in order to withdraw attention from the excessive prices that were charged for other items. By insisting on having two contractors, as was originally contemplated, the game was defeated by the Board.

This view impressed the Court of Appeal, and in the judgment the contractors were not represented as deserving of sympathy, for it was said:—"It is also manifest that the complainant did not intend to give the Board an opportunity to correct the mistakes and award the contract on the corrected basis. There was no colour of foundation for the assertion that the proposals were to be treated as a single bid for contracts No. 1 and No. 2, and that both contracts must be awarded to the complainant or neither. The position thus taken by the complainant was well calculated to excite distrust on the part of the Board, and induce its members to believe that the alleged mistakes were an afterthought, conceived when the complainant had become convinced by studying the proposals of the competitors that it could not profitably carry out the contract on the terms proposed."

American contractors have reputations to uphold like other citizens, and caution should be exercised in speaking of a process of calculation of which, we suppose, not one of the judges could have had experience. In an article on the case in the *Engineering Record* of New York, the conclusions of the Court of Appeal are strongly criticised. The contractors believed that all of the work was to be entrusted to a single firm, and that arrangement no doubt determined their prices. If they were in error the applications for tenders and the conditions of contract, in spite of the great length of the documents, must have been very unskilfully drawn.

An English contractor will ask, What would be the result if a similar case occurred in this country? Unfortunately he would find there was as much difference of opinion among English experts as among American judges. It is one of the misfortunes of the business of contracting that so many people believe the element of chance cannot be eliminated from it. Men who do not hesitate to assume that when they enter a shop and order an article they receive the full value for the money expended, and are proud of the veracity which is exemplified in commercial dealings, take a different view when they have to deal with engineering or building construction. However moderate may be the price which a contractor may ask, they conclude it is far higher than is necessary, because ample provision is made in it for the most remote contingencies. That belief or misgiving is not unknown in English law courts, and hence it is that in many cases where errors are committed in tenders a contractor is advised to accept the inevitable loss rather than undertake a lawsuit which may be costly, and which probably will not end in his favour. It so happens that if no foresight or experience can enable an outsider to conclude whether a judge will decide in favour of a contractor in case of error, it is no less uncertain whether judgment will be given for the opposite party. That consideration has prevented many threats of compelling contractors to stand by their erroneous tenders from being realised.

Much of course depends on the time when an error was discovered and announced. If, as in the American case, formal notice were given at once, it may be assumed a point would be gained by the contractor which would have weight in the courts. But if the building owner had made arrangements and suffered inconvenience before he received information of the error, the case assumes another aspect. It would then be advisable to offer more or less compensation, but equivalent to the loss incurred; and as the amount would depend upon the circumstances of each contract, it is of course impossible to say whether it would not be more advantageous to carry out the contract at the amount of the tender. The prospect of litigation which is to last for seven years, like the Rochester case, is enough to daunt building owners or those that let contracts as well as contractors.

THE SHIP IN ART.*

THE handbooks which appeared under the auspices of the late Science and Art Department, although no official responsibility was assumed for them, have been serviceable not only to artists and the students of art, but to the general public. The latest addition to them is one on wooden ships. The subject is vast, for it is equivalent to the history of navigation from the time of the ancient Egyptians down to the nineteenth century. The author, Mr. Holmes, has to explain how difficult it was to obtain information, for it is almost more impossible to discover the designers of vessels than the designers of buildings. He has, however, contrived to collect an amount of information which will no doubt be useful to incipient naval architects—if we can suppose they care to be burthened with antiquity—but is more likely to be sought after by artists who may have to represent ships that, if now obsolete, were picturesque, and consequently unlike the modern floating fortifications.

In various parts of the world boats can still be seen which have been hollowed by fire or tools out of the trunk of a tree. It is remarkable that the Greeks expressed the type by the word *monoxyles*, and the Romans at a subsequent time by *trabariæ*. If we can credit Pliny, the Germans were able to make simple vessels in that way which carried thirty men. But there is no Greek author who suggests that his countrymen's boats were equally capacious. Other materials were also used, such as the hides of animals, a material which may still be seen doing useful work in the coracles of the west coast of Ireland. The Egyptians utilised papyrus, at least for the sails of their boats, and if we believe Juvenal, terra-cotta was sometimes turned to account for boat-building:—

> Parvula fictilibus solitum dare vela phaselis,
> Et brevibus pictâ remis incumbere testâ.

The pirates who so often attacked the Greek coasts were probably the men to whom improvements in boat-building were at first mainly owing, and the oldest recorded navy, that of Minos, is said to have been created for the suppression of piracy. The expedition of the Argonauts has given immortality to Argos, the son of Phrixus, who built the stout ship which was capable to carry the most distinguished heroes of the different tribes to the number of fifty. According to the ancient poem describing the expedition, the vessel amazed those who were to sail in it, but apparently it was more simple than any fishing-boat which carries a sail. In the Vatican collection is a terra-cotta relief in which the construction and fitting of the vessel is seen under the direction of Pallas as Ergane.

There are representations of Egyptian as well as Greek boats, but the former are more suggestive of detail. Villiers Stuart, in his "Nile Gleanings," reproduces a painting of a boat of the time of the third dynasty, which formed part of the decoration of a tomb. He supposes it was a dug-out canoe, and was used over 6,000 years ago. In the Berlin Museum is the model of a boat of the fourth dynasty, showing great improvements. In the various expeditions of the Egyptian monarchs sailing-boats were indispensable, and they were sometimes constructed with a length of 200 feet by 69 feet. According to Herodotus, the thorny acacia was much used in boat-building in his day. He tells us how "from this tree they cut pieces of wood about two cubits in length, and arrange them like bricks, fastening the boat together by a great number of long bolts through the two-cubit pieces; and when they have thus fastened the boat together they lay cross pieces over the top, using no ribs for the sides, and within they seem to caulk the seams with papyrus. They make one steering oar for it, which is passed through the bottom of the boat, and they have a mast of acacia and sails of papyrus. These boats cannot sail up the river unless there be a very fresh wind blowing, but are towed." The Egyptian mode of construction was enduring, for several boats which were made about 2850 B.C., discovered by M. de Morgan, were so well joined, they still hold together after nearly 5,000 years.

It is difficult to obtain any precise notion of the Greek boats. Lucian describes a vessel which traded between Egypt and the Piræus as if it had been remarkable for its grandeur, for the dimensions were 180 feet by 50 feet by 43 feet; but when we learn that it was controlled by a small old man with a bald head, we are disposed to conclude it was not unlike one of the barges to be seen in the lower reaches of the Thames, and which make their way to a great extent by drifting. A vase in the British Museum, of which the date is about 800 B.C., has painted on it a representation of a bireme. It is supposed, however, that from its open sides and small freeboard it was not adapted as a sea-boat, and could only be used in smooth water. It would, however, be very difficult from any of the representations we possess to make a model of an early Greek vessel, and even Sir Alma-Tadema would have to draw upon his imagination if he were commissioned to give us a series of paintings from the ancient romance "Chæreas and Callirhoë." It was not uncommon to mention vessels with eleven, twelve and even sixteen banks of rowers, but how so numerous a body of oarsmen could be arranged and be able to work simultaneously it is now impossible to understand. Some classic economist has, however, recorded that the wages to the men on the lowest benches were at a reduced rate, as their oars were shorter, and the labour less toilsome on that account.

The ancient representations of the vessels would be of little use to boat-builders. The painters or sculptors naturally were disposed to give their attention to those parts alone which were most impressive to an artist. In the poop there was a cabin which was often suggestive of a fort. Sometimes rising over it was an *aplustre*, which seems to have been derived from one of the Eastern fans made from the tails of birds. It was a symbolic ornament, and the curved lines of it must have been taken to confer dignity on whoever sat beneath them, as if he were the representative of Neptune. The prow was sometimes made to assume the form of the head of an animal, but with it were combined sharpened beams of timber or iron, which caused much damage in a collision with another vessel. Montfauçon has an illustration of a vessel in which at the prow was a figure of a huge centaur. Shakespeare in a marvellous way has interpreted the descriptions of some of the ancient writers and the representations of the ancient artists when he narrated the meeting of Cleopatra with Marc Antony:—

> The barge she sat in, like a burnished throne,
> Burn'd on the water; the poop was beaten gold;
> Purple the sails, and so perfumed that
> The winds were love-sick with them; the oars were silver
> Which to the tune of flutes kept stroke, and made
> The water which they beat to follow faster,
> As amorous of their strokes . . . she did lie
> In her pavilion—cloth of gold of tissue.
> . . . . . At the helm
> A seeming mermaid steers; the silken tackle
> Swell with the touches of those flower-soft hands
> That yarely frame the office.

From illuminations in Anglo-Saxon manuscripts the early British ships were very cumbersome structures, and the deck-house on board seems a combination of a tiled church, a lighthouse and triumphal arch. Those which Alfred the Great designed were distinguished mainly by the length, for according to the Saxon Chronicle, "they were full twice as long as the others; some had sixty oars, and some had more. They were swifter and steadier, and also higher than the others. They were shaped neither like the Frisian nor the Danish, but so, as it seemed to him, they would be most efficient." Alfred's boats, if we could discover one of them, would probably be found to be superior to any representation of Mediæval artists. The lines of the boat found in 1880 at Gogstad, near Sandifjord, are excellent, and the boat is well adapted to be propelled by sails and oars. Of one of the three boats dug out of a bog at Jetland in 1865 Mr. Holmes says:—"It would be difficult, even at the present time, to find a vessel in which lightness and strength were better combined than in this fifteen-hundred-year-old specimen of the shipbuilder's art."

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* *Ancient and Modern Ships.* Part I., Wooden Sailing Ships. By George C. V. Holmes. Published for the Board of Education by Chapman & Hall, Limited.

The Crusades made it necessary that improvements should be introduced in sailing vessels. According to Matthew Paris, some of the galleys carried sixty men in armour besides 104 rowers and sailors. A contemporary Saracenic vessel was said to have carried 1,500 men. In the reign of Henry III. it was said that the ships of Tarsus could not compare with English ships. The Sandwich seal of 1238 shows a boat which is of the Scandinavian type, and there is no great improvement visible at the end of the thirteenth century if the Dover seal can be trusted as evidence. In the Poole seal of 1325 we see "the earliest known instance of an English ship fitted with a rudder at the stern instead of the side rudder, or paddle, which had been in use from the very earliest times. We also notice in this ship a further development of the stern and forecastle, which, however, were not as yet fully incorporated with the structure of the hull." As soon as cannon were employed on board vessels their character was changed. The section of a Venetian galleon for that reason approached that of a vase or flower-pot, for the greatest beam was double the width of the upper deck. Henry V. realised the importance of a large fleet, and one of the king's ships was of 1,000 tons. In 1415 he crossed the Channel with a fleet of 1,400 vessels, and in the following year with from 300 to 400 ships he fought a battle off Harfleur and was successful. Again, in 1417, Henry collected 1,500 vessels at Southampton for his last invasion. Shakespeare gives a vivid picture of the appearance of the fleet :—

> Suppose that you have seen
> The well-appointed king at Hampton pier
> Embark his royalty ; and his brave fleet
> With silken streamers the young Phœbus fanning.
> Play with your fancies, and in them behold
> Upon the hempen tackle ship-boys climbing ;
> Hear the shrill whistle which doth order give
> To sounds confused ; behold the threaden sails,
> Borne with the invisible and creeping wind,
> Draw the huge bottoms through the furrowed sea,
> Breasting the lofty surge ; O, do but think,
> You stand upon the rivage and behold
> A city on the inconstant billows dancing ;
> For so appears this fleet majestical,
> Holding due course to Harfleur.

The vessels which Henry controlled were either merchant vessels which he had seized on or which had to be supplied by the Cinque Ports. The royal Navy of England really began with the construction of the *Sovereign* by order of Henry VII. The naval architect employed by the king was Sir Reginald Braye, a knight of the garter, who is by some supposed to have been the architect of the chapel of Henry VII. in Westminster Abbey. It was destroyed in battle. Henry VIII. resolved to surpass the *Caraçon* of Francis I. by the *Henry Grace à Dieu*, which, if the drawings are of any value, must have been a very imposing ship. But a single voyage was sufficient to prove she was not adapted to rule the waves. Elizabeth continued to act in her father's spirit, and it was fortunate she was able to resist the fleet sent by the Spaniard. Mr. Holmes points out that the common belief about the difference between the dimensions of the English and the Spanish ships is unfounded. The *Triumph*, which Frobisher commanded, was in size exceeded by no more than four Spanish vessels. James I. was not regardless of the Navy, but Charles I. gave more impetus to ship construction than any of his predecessors. The *Sovereign of the Seas*, which was designed by Phineas Pett, M.A., is described as the commencement of the better school of ship construction. After bearing a part in many engagements she was accidentally burned at Chatham. The exterior did not present the stern simplicity of the modern battleship, and in those days wood was not considered to be ill-adapted for contest because it was elaborately carved or painted. We know much about the anxiety of the two sons of Charles I. to have irresistible warships. Mr. Pepys is an authority which all must accept, and on reading his Diary it is difficult to believe that the Duke of York, who worked so hard at the Admiralty, could be so bad a man as the historians represent. It is, however, not complimentary to the designing power of English officials to be told that "during the whole of our naval history, down to comparatively recent times, improvements in the dimensions and forms of our ships were only carried out after they had been originally adopted by the French or Spaniards, or more recently by the people of the United States of America."

It is also worth notice how incomplete are the representations of English ships. For some vessels recourse must be had to the works of Dutch artists. Not even in Greenwich Hospital can we see such a collection of paintings as those in the Rjicks Museum at Amsterdam. To Turner much is owing, and at a later time Stanfield and Chambers, two sailors, also took up the representation of ships. But in the majority of sea-pieces the introduction of ships is only incidental. The small volume by Mr. Holmes will, we hope, induce artists to give more attention to a class of construction which must always be associated with the greatest struggles of England to retain her position among nations. Naval men often complain, and with some reason, of the neglect they suffer, and it is therefore satisfactory to find that the Board of Education shows a more comprehensive spirit than the former Science and Art Department, and is not blind to the fact that the sea, no less than the land, can be made a subject which is worth the attention of artists as well as of men of science.

PRINCIPLES OF CONSTRUCTION FOR ARCHITECTURAL STUDENTS.

By E. Wyndham Tarn, M.A.

(*Continued from last week.*)

VII. *Transverse Stress.*

When a straight beam is placed in a horizontal position and firmly fixed at one end while a load is applied at the unsupported end, the beam will be bent downwards, and instead of being straight it will be found to have assumed a curved outline, the concavity being on the under side and the convexity on the top. The fibres of the upper part will be subjected to an elongating or tensile stress, while those of the lower part will be subjected to a compressive or crushing stress. Also it will be evident that those fibres which are nearest the top or bottom will be more stretched or compressed than those which are further inwards, the alteration of length being inversely proportional to their distance from either surface Consequently there must be some plane in the middle of the beam where the fibres are neither lengthened nor shortened, and this plane is called the neutral surface of the beam.

Taking a vertical section through the beam at any point, this section will cut the neutral surface in a line which is called the neutral axis of that section ; and if the resistances to extension and compression are equal in the material, the neutral axis will pass through the centre of gravity of the section, and this is generally the case so long as the elasticity of the material remains unimpaired by the stress to which it is subjected.

The force which will produce an elongating or shortening of the fibres is proportional to the modulus of elasticity, E, of the material, and the "moment" of resistance of any section taken about its neutral axis or centre of gravity is the quantity E divided by the "radius of curvature" of the neutral surface, and multiplied by the sum of the area of each fibre multiplied by the square of its distance from the centre of gravity. This sum is called the "moment of inertia" of the section taken about its centre of gravity, and is found for any given form of section by help of the "Integral Calculus," the letter "I" being used to denote it.

In a rectangular section I is one-twelfth of the product of the breadth and the cube of the depth—that is to say, if the depth is 10 inches and the breadth 6 inches, we find the value of I to be 6 times 1,000 divided by 12, or 500. This quantity, I, has to be divided by half the depth of the beam, and multiplied by the safe load per square inch of section. We then have the "moment" of resistance of the section taken about the centre of gravity, which must equal the "moment" of the load also taken about that point.

Taking the section of a rectangular beam at the point next the wall of support, we find the safe load at the end by dividing the product of the breadth and square of the depth in inches by the length in inches, and multiplying the result by one-sixth of the safe load per square inch in tons; this gives the safe load in tons that can be placed at the end of the beam.

In the example given above we have to divide 500 by half the depth, or 5, and multiply by three-fourths if the beam is of oak, giving the number 75 for the "moment" of resistance. If the beam is 10 feet long, or 120 inches, we find the safe load to be 75 divided by 120, or nearly $\frac{2}{3}$ ton. Where the load is uniformly distributed over the whole length of the beam it will bear twice as much with safety, which in this case will be $1\frac{1}{4}$ ton.

When the beam is supported at both ends and loaded at the middle, it will bear four times as much as when held at one end only and loaded at the outer end; so that in an oak beam 10 inches by 6 inches and 10 feet long the safe load at the middle will be $2\frac{1}{2}$ tons, or if the load is uniformly distributed it will be 5 tons.

If the beam is supported in the middle as well as at the two ends, each half will bear twice as much as the whole beam without a middle support, and the whole beam will therefore bear four times as much with a middle support as it will without it; so that in the above example the safe load is 20 tons uniformly distributed over its whole length.

The resistance of a beam to transverse stress being proportional to the breadth and the square of the depth, we see that for a given section of the beam the strength is much more increased by increase of depth than by increase of breadth. If the breadth is doubled the strength is only doubled, but if the depth is doubled the strength is increased fourfold. A beam 14 inches deep and 6 inches broad is twice as strong as one 10 inches deep and 6 inches broad, the quantity of material being in the proportion of 7 to 5.

Wrought-iron beams are generally made with two equal "flanges" connected by a vertical "web." In a beam of this form having flanges 4 inches wide and a depth of 8 inches, the thickness of the metal being $\frac{5}{8}$ inch, the safe load at the middle is $3\frac{1}{2}$ tons for a length of 10 feet, or 7 tons if uniformly distributed. Let the beam be 12 inches deep and 6 inches wide, with $\frac{3}{4}$ inch of metal, then the safe load at the middle is 10 tons for a length of 10 feet, or 5 tons for a length of 20 feet.

The strength of steel beams may be taken as double that of wrought-iron beams of the same size.

Beams of uniform depth throughout are stronger at the supported ends than at the middle, which is the weakest part; but if the depth is made to diminish from the centre towards the two ends so that the outline is that of an ellipse, the beam will be of uniform strength throughout. This plan is adopted in beams which carry all the load upon the lower flange, and a considerable saving in weight of metal may thereby be effected in beams of large size.

(*To be continued.*)

DISCOVERY OF THE PALACE OF KNOSSOS AND ITS PREHISTORIC ARCHIVES.

An important article on the above subject, by Mr. Arthur J. Evans, who has taken part in the exploration, has appeared in the *Manchester Guardian*. He says:—

Over twenty years have now passed since Schliemann's great discoveries at Mycenæ and Tiryns revealed a new world of ancient culture. It was at once seen that a true tradition of this old civilisation of Mycenæ has been preserved in the Homeric poems, though its palmiest days lay far behind the period when those poems took their present shape. Recent finds of imported Mycenæan objects in Egyptian deposits of eighteenth dynasty date have since conclusively shown that they go back at least to the seventeenth and succeeding centuries before our era, and the remains of the palace of Tel-el-Amarna reveal the fact that already as early as the fourteenth century B.C. Ægean art had attained such a strong independent position as actually to have been reacting on that of contemporary Egypt.

Of the power and beauty of that art a new and striking example was supplied by Dr. Tsountas's discovery in the beehive tomb of the Vapheio near Sparta of the gold vases with reliefs of bull-hunting scenes in a style which for naturalism and force was never equalled in the classical days of Greece. From Cyprus and the Syrian coast to Sicily and Southern Italy, from the Delta to the Euxine shores, new evidence was perpetually accumulating as to the far-reaching enterprise of the representatives of the Mycenæan culture and the variety of their productiveness. In one respect—and in one respect only—did the remains of this early Ægean civilisation seem to fall behind that of contemporary Egypt and Babylonia. Amongst all Schliemann's finds there was no authentic specimen of writing. A few signs on vase handles have indeed been found by Dr. Tsountas, but these had been set aside as ignorant copies of some Hittite or Syrian script. In summing up the evidence regarding this important subject in his great work on Mycenæan art, M. Perrot was reduced to the conclusion that "as at present advised, we can continue to affirm that for the whole of this period, neither in Peloponnese nor in Central Greece, no more upon the buildings nor upon the thousand objects of domestic use and of luxury that have come forth from the tombs, has anything been discovered which resembles any form of writing."

But was this great civilisation of prehistoric Greece indeed dumb? Were these mighty rulers, these enterprising manufacturers and merchants, in such constant relations as they were with Egypt and the East, so far behind their neighbours in this most essential feature of culture? For my own part, it seemed impossible to believe it. Nor could one fail to reflect that, important as were the ancient centres explored on the mainland of Greece, the most ancient traditions consistently pointed to Crete, the seat of Minos's sea empire and of the famed works of Dædalos, as the real cradle of Hellenic civilisation—the home of its earliest school of art and of the system of law from which all later codes descended.

When in Athens in 1893 a piece of evidence fell into my hands which convinced me that among the secrets of the still unexplored Mycenæan sites of Crete was the existence of written documents. I succeeded, namely, in obtaining some three and four-sided seals of prehistoric fabric from that island, engraved on each of their faces with groups of signs which seemed to me to be of a hieroglyphic character, though distinct from those of the Egyptians and the Hittites. With the object of investigating the subject and the primeval remains of Crete generally I undertook from 1894 onwards a series of explorations, which were continued even during the insurrectionary period. As a result of these researches, not only did I find abundant traces of a great prehistoric civilisation, but among them further evidence of the existence of writing in Mycenæan times. The hieroglyphic signs, and with them some of a linear class, were found to occur on seals and other objects, especially on the Mycenæan sites of Eastern Crete, and from an early votive deposit in the Cave of Zeus on Mount Dicta I obtained a part of a libation table incised with a dedication in similar characters. Signs of a more symbolic nature were already known to exist on some blocks belonging to the remains of a prehistoric building on a hill called Kephala, near the site of Knossos, the traditional seat of King Minos, and an excavation here seemed to promise the best solution of many of the problems that I had set myself to solve. Unfortunately great difficulties beset the acquisition of the site, and though I succeeded in gaining a part ownership of it as early as 1895, it was not till last winter that, after encountering obstacles of every kind, I was able to secure the whole. Aided by the Cretan Excavation Fund, and with the consent of Prince George's Government, I at once began excavations on a large scale, which have already produced results even beyond my most sanguine hopes.

The hill of Kephala proved to conceal the remains of a Mycenæan palace, built on a far vaster scale than those of Tiryns or Mycenæ itself. The two acres or so at present uncovered only represent about half of the whole area, but they have already produced discoveries with which, if we except the Akropolis tombs of Mycenæ, no contemporary remains of mainland Greece can compare for interest. An astonishing piece of good fortune awaited the excavators. Though lying in the immediate neighbourhood of the site of the great Greek and Roman city of Knossos and the later Candia, the site had been practically left undisturbed since the days when the palace was burnt and plundered, probably by the Dorian invaders, and certainly not later than the twelfth century before our era. In some rooms ancient frescoes remained intact on the walls only a few inches below the surface of the ground. Here and there in later times some local Bey or peasant had dug a hole to obtain stone slabs for his yard or threshing-floor, but there had been no systematic quarrying. Over the greater part of the area not even a ploughshare seems to have passed. Not a tree had been planted there for over 3,000 years. On the whole site hardly an object later than the prehistoric period of Greece came to light. There seems, indeed, every reason to believe that in ancient times at least religious awe had contributed to maintain the desolation of the site. This vast dwelling-place of prehistoric kings, with its magazines and dependencies, its long corridors and tortuous passages, must almost certainly be identified with the "labyrinth" of grisly fame. The word "labyrinthos" is itself the Cretan equivalent to the Carian Labraundos, and implies consecration to the chief god of these two kindred peoples—the Zeus of the labrys or double axe. But on the most ancient blocks of the palace and covering the pillars of some of the rooms, this religious symbol was constantly repeated. In close connection with the god of the double axe stood votive representations of the bull, and remains of huge bulls—in the one case in fresco, in the other in high relief in painted plaster—were found hard by the western and northern palace gates. Such significant features, no doubt far better preserved in the days when the Dorian immigrants first occupied the city below, may well have contributed towards the rise of the legend.

Perhaps even the "maiden tribute" was suggested by some wall-paintings existing in what may have been the harem-rooms of the palace. Here were found frescoes in a hitherto unknown miniature style representing groups of ladies, very décolletées and very modern in their appearance, engaged in animated conversation within the courts and on the balconies of what may have been intended for the palace itself. The frescoes, indeed, of every kind were among the most remarkable of the discoveries made on the site. The colours were preserved with extraordinary freshness. In a corridor leading from the western entrance were remains of the lower part of a procession of magnificently dressed personages, with a flounced figure, not improbably a queen, forming the centre of a group. From a side wall of the neighbouring propylæa there had fallen into a passage the upper part of a life-sized painting of a youth holding a pointed cup of silver with gold mountings, which for the first time supplies a real portrayal of a man of Mycenæan times. The profile is pure and almost classically Greek, certainly non-Semitic, and both it, the advanced representation of the eye, and the natural moulding of limbs and body show that we have to do with a school of painting which had reached a level not even attained by the historic Greeks till the greatest days of red-figure vase-painting at the beginning of the fifth century B.C., after an interval of barbaric decadence and slow recovery extending over some 800 years.

The sculpture found in the palace points to an equally high artistic development. Fragments of a frieze, with rosettes in high relief, display a bolder and finer execution than specimens of the same kind from Tiryns and Mycenæ. A marble head of a lioness, made apparently for a fountain, shows considerable naturalistic advance. The surface of this had been originally coloured, and the eyes inlaid with enamels. An exquisite imitation of natural forms is supplied by a gypsum vessel, faithfully copied from a great triton shell. The head of the bull relief already referred to is certainly the finest plastic work that has come down from this time, and for boldness and spirit is on a level with the designs of the Vapheio cups. Another very spirited representation of the same animal is painted, in an exquisite miniature style, on the back of a crystal plaque. Among other smaller works of art is the first Mycenæan cameo known. It is finely cut out of a banded agate, and represents an elaborately worked belt and dagger. It was not till after an interval of a thousand years that such small reliefs on gems were again produced. Among the clay seals there are impressions of a beautiful series of intaglios, some of them indicating the rise of a picturesque and even romantic style. A hart is seen reposing beside a brook in a mountain glen; fish disport themselves in a rocky pool; in one case little human, or perhaps simian, figures are perched on a craggy steep which overhangs the mouth of a grotto.

It is impossible here to give a detailed account of the buildings uncovered. The palace has been a good deal remodelled at different times, and its earlier elements go back to the already flourishing period of Ægean art that precedes that of Mycenæ proper. The date of this is approximately fixed by the discovery of the lower part of a seated Egyptian figure of diorite with an inscription proclaiming it to belong to the twelfth dynasty, and not later than about 2,500 B.C. Below this again, covering the whole hill, was a primitive settlement belonging to the Stone Age—the neolithic deposit being in some places about 24 feet in thickness. In my recent excavations, however, I endeavoured as far as possible to confine myself to the later palace remains belonging to the pure Mycenæan Age. These included great paved courts on the western and eastern sides, entrance porticoes or propylæa to north and south, and a great number of galleries and chambers. A spacious paved corridor ran from north to south, into which opened a succession of large magazines, on the floor of which still stood the big store vases—large enough to contain the forty thieves. Below these magazines again, concealed beneath the carefully compacted pavement, were double tiers of stone cists lined with lead, and apparently intended for the reception of treasure. The few opened were empty, though hundreds probably remain to be explored. But of all the architectural remains brought to light, unquestionably the most interesting was a chamber in many respects as perfectly preserved as anything found beneath the volcanic ash of Pompeii, in which Minos himself or some of his successors may well have sat in council. Against the middle of its northern wall and raised on a square base, stands a curiously carved throne cut out of a single block of gypsum, It has a high back, originally painted with a decorative design, and arched and crocketed mouldings below which present a strange resemblance to details of Gothic architecture. Round the other sides of the room run lower stone benches, which may have accommodated a score of counsellors, and the throne-room is approached by a spacious ante-chamber flanked with additional benches. Opposite the throne and surmounted originally by cypress-wood columns, was a finely wrought stone tank—a feature borrowed perhaps from an Egyptian palace. On the walls on either side of the royal seat were still preserved large pieces of fresco representing flowering plants and running water, while the doorway of a small inner room was guarded on either hand by a painted griffin, backed by the same flowery landscape.

I have, however, reserved to the last the most interesting of all the revelations of this ancient Mycenæan civilisation brought to light within the palace walls of Knossos—that, namely, which seven years before I had set myself to seek on Cretan soil. At first in isolated fragments, afterwards in regular deposits, there came to light a long series of inscribed clay tablets, analogous to those of Babylonia but of a different shape, representing the archives of the House of Minos. The writing itself was of a more developed form than the quasi-pictorial and hieroglyphic signs on the seals found by me during my earlier explorations. In one magazine, indeed, occurred a deposit of tablets of another class, inscribed with writing in the hieroglyphic style which seems to have belonged to the more eastern part of the island. But the great mass of the inscriptions—over a thousand in number—were written in linear characters which, though showing a certain element in common with the more pictographic class, must on the whole be regarded as independent and as representing a higher stage of evolution in the art of writing. The signs—probably syllabic—of which about seventy seem to have been in general use, are of singularly elegant forms. They are upright and European in character, and form an abrupt contrast to the Phœnician, though a certain proportion suggest parallels with the early syllabacy used by the Greeks in Cyprus, and several are so like those of the later Greek alphabet that one is irresistibly impelled to the conclusion that this old Mycenæan script must have reacted later on the borrowed Phœnician forms. A great number of tablets also contain what are obviously numerals, and refer, no doubt, to palace accounts. That many of these clay documents refer to the royal stores and arsenals is clear from the pictorial forms which often occur besides the script, such as chariots and horses, houses, human figures (perhaps slaves), ingots and vessels of precious metals, others for various liquids, swine, ears of corn, trees, and a flowering plant—perhaps a crocus used for dyes. Other tablets may have contained contracts or correspondence, such as the contemporary records of Syria and Babylonia. These clay archives had been originally deposited in coffers of wood, gypsum or pottery, and these in turn had been secured by clay seals, of which numerous specimens were discovered. These were impressed by engraved seals showing in many cases boldly-cut designs belonging to the best period of Mycenæan art. One of these, exhibiting two bulls as its principal type, is taken from an intaglio larger than any known example of the time, and may well be a royal seal. This careful sealing up of documents might itself be regarded as a sign of a high level of civilisation, but in the Palace of Minos legal precaution went far beyond this. While the clay was still wet, the impress of the seal had been often countermarked by some controlling official, while the back was at the same time countersigned with an inscription in the same prehistoric script as the tablets themselves.

The result of these discoveries is to carry back the existence of written documents in the Greek world some six centuries beyond the earliest records in the later Greek writing. Much indeed remains to be elucidated. A bilingual inscription has not yet been found, and we do not know even the language in which the Knossian tablets were inscribed. The pictographic class were almost certainly written in a native dialect of the old indigenous race of Crete—the Eteocretans of the "Odyssey." But there is at least a certain presumption that the more advanced script may be the work of Greek hands—in other words, of the first Hellenic settlers in the island, who were apparently of "Achæan" race, akin to the later Arcadians and to the early settlers in Cyprus. Much preliminary study and comparison of the elements supplied by these clay records is still necessary, but at least there is no reason to despair of finally discovering the key of this ancient cypher.

OCKHAM CHURCH.*

OCKHAM Church is dedicated to All Saints, and stands in Ockham Park at a distance of less than 100 yards from the mansion. It is built of flint and ironstone rubble, with dressings of freestone and chalk, and consists of a nave and chancel, with a north aisle, formerly called Weston's Chapel, from the north side of which projects a more modern and somewhat hideous erection in brickwork containing the monuments of the King family, and covering their vault, now permanently closed. At the west end is a massive and well-proportioned tower, picturesquely but somewhat dangerously mantled with ivy. There are but very slight traces in the present building of any work older than the thirteenth century, and the only architectural feature remaining which can possibly have belonged to the church spoken of in Domesday Book as existing at Ockham is the plain, possibly Anglo-Norman, arch at the entrance to the tower at the west end of the church. A Saxon church in this situation would in all probability have been erected of woodwork, being replaced after the Conquest by a stone building, as was the case generally in neighbouring parishes. That something was done to the church in the twelfth century is proved by the existence of a lower part of a triplet or group of three single-light windows at the east end of the chancel, with jambs widely splayed so as nearly to meet on the inside of the walls. Also, with the exception of a fragment of a label or string-course built up in one light of the triplet, nothing remains which can with certainty be referred to a date anterior to the thirteenth century. To the latter century—an era of the complete development of Mediæval architecture into an original style—belong the present exceptionally handsome east window, the chancel arch and the arches with their columns, responds between the nave and chancel, although subsequently windows and a door in later style have been broken through. At all events, the lower part of the chancel wall is proved to belong to this period by a string-course and the double piscina in the south wall discovered in 1875. The north aisle was probably added in the thirteenth century by the then rector; its architectural details have been badly disfigured by modern alterations, particularly by the incongruous entrance to the monument to Lord King. The original roof with its trusses and richly-moulded timbers still remains, but the boarded ceiling with its ribs and bosses appears to have been added shortly after the roof was constructed, for the ceiling joists above are wrought and moulded as if intended to be exposed. The carved bosses over the internal mitre of projecting mouldings on the roof are worthy of examination, and are varied, for among the designs may be seen the Hemp bray and the Staffordshire knot, which latter appears also in the cœval stained glass in two of the chancel windows. To the fourteenth century also belong the two handsome three-light windows in the south wall of the nave, which still contain fragments of their original stained glass, also the cinquefoil piscina below one of them. The church still contains some fragments of "old" seats with quaint irregular piercings in the panels, which belonged to the latter part of the fifteenth century, and were remodelled into the existing sittings in 1875. The rood-loft is believed to be fifteenth-century work, and the stone stairs up the north pier of the chancel arch were formed to lead up to it, probably approached by wood steps up the side of the wall, which existed there prior to the enlargement of the vestry in 1875.

As to the meaning of rood-loft, it was explained that in the early days a screen usually divided the chancel from the nave of the church. In some churches this screen was carried over the nave, and afforded space for a narrow gallery along the top, to which access was given by a winding stair in the body of the wall on one side (usually the north side, as this church). From gallery or loft the gospel was sometimes read in the Communion service. Here sometimes (as in the gallery at the end of a domestic hall, an idea reproduced in the hall of the Hautboy hotel) were placed the musicians who accompanied the service, and in later times the organ which superseded them, as in some of our cathedrals, and it was called a rode or rood-loft, because a rood or crucifix was usually placed thereon. At the same time probably the curious hagioscope or squint with oak switches was formed to command a view of the altar from the north aisle or chapel, being discovered and opened out in 1875. According to competent authorities there are few churches similar in size illustrating so well the history of English Pointed architecture. There is not an example of the early or geometrical Decorated style, but the other styles of Pointed architecture are not only represented, but by unusually good examples. The east window, a group of seven lancets plain externally, but united internally by a lovely arcade of dog-toothed arches carried on shafts of Purbeck marble abaci, is not only remarkable for its lights, but for its extreme architectural beauty. The work of this date and also of the fourteenth and fifteenth centuries is unusually defined, well designed, and abounds in originality. There is only one other similar window in England, viz. in Blakeney Church, Norfolk. The beautiful stained glass was inserted by the Rev. Seymour Neville, in 1875, painted by Powell from designs of Mr. T. G. Jackson, R.A., and represents the subject of the dedication of the church to All Saints. Our Saviour in the centre, on each side are St. Stephen and St. Paul, St. Mary the Virgin and St. Mary Magdalene, while underneath and at the sides are beautiful figures of children to represent the innocents and lesser saints bearing a scroll in which is an appropriate text. The beautiful fourteenth-century niche and canopy now partly hidden behind the organ was removed from the north aisle when it was extended in 1875. Within the altar rails are preserved the remains of a Purbeck marble font of the thirteenth century, of which the base and centre shaft in considerable state of decay were discovered embedded in a brickwork pier which formed the pedestal of a modern bowl. The new font made in 1875 is reproduced from the old pattern. On the outside of the church at south side is a tombstone, now mostly covered with ivy and a good deal broken, but with the epitaph still in places decipherable, and which is quoted in most books of epitaphs that have been published.

John Spong, died November 17, mvccxxxvj, aged 60.

Who many a sturdy oak has laid along,
Felled by Death's surer hatchet, here lies Spong;
Posts oft he made, but ne'er a place could get,
And lived by railing tho' he was not wit.
Old Saws he had altho' no Antiquarian,
And styles corrected yet was no Grammarian.
Long liv'd he Ockham's premier Architect,
And lasting as his fame a tomb t' erect.
In vain we seek an artist such as he,
Whose pales and gates are for eternity;
So here he rests from all life's toils and follies,
Oh spare, kind Heav'n, his fellow lab'rer Hollis.

Just opposite the west door of the church is the decayed trunk of what at one time was a huge oak tree. In Manning and Bray's well-known work published in 1814, there is a note as follows:—"In the churchyard near the west end of the church is the body of a very large oak about 12 feet high, the top having been broken off, entirely dead and hollow, in the middle of which a young oak has sprung up."

At the commencement of the present reign it is believed that there was no such thing as a proper hymn book, and the music was chiefly administered with a fiddle and hautboy, from which no doubt is obtained a reminiscence in the Hautboy and Fiddle hotel close by in the village, as its old name was. In the parish chest a quaint note in the handwriting of the Rev. W. Thompson, who was rector 1843-52, begins "No vestry for two years some murmurs," then goes on to recapitulate what has been done for the church. *Inter alia*, he states, "Organ, thirty tunes on three barrels recommended by Mr. Bromley, professional friend of Dr. Lushington, cheapest he could find. The Send village organ cost 70*l.* and has twenty tunes, ours cost 37*l.* 16*s* and has thirty tunes." How tired the congregation must have been of these tunes, although it is a peculiar fact that last Advent we were practising the old tune "Helmsley," to the hymn "Lo! He comes," and which formed one of the thirty, as we found the old book in the church, but is not included in many modern hymn books An interesting piece of poetry supplied by Miss Onslow, late of Dunsborough, Ripley, written by her great grandfather, Colonel Geo. Onslow, is as follows:—

The squeaking of pigs, the barking of dogs,
The hooting of owls, the grunting of hogs,
Make altogether much confusion of noises
As when Ockham and Ripley in Psalms join their voices.
And then the old clerk to make it more odd
Calls this singing the praise and glory of God.
If discord can be to God's honour and glory
I'm sure there's no choir than can go before ye.
In heaven if harmony is to be found,
Ye ne'er can go there, ye must bide on the ground.

The Prince and Princess of Wales are to be the guests of the Marquis and Marchioness of Londonderry at Mount Stewart, county Down, when they visit Belfast for the purpose of laying the foundation-stone of the Diamond Jubilee Hospital. The date of the visit has not yet been fixed.

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* A paper by Mr. A. St. John Bashell, read before the Surrey Archæological Society at the visit to the building.

NOTES AND COMMENTS.

Purchasers of house property in new districts are often disagreeably surprised when they discover they are responsible for paving, flagging and other works in connection with their purchase. In selling property under those conditions there is more reticence about obligations than is altogether honest. But the question is, Does the neglect to inform intending purchasers of the responsibilities they will have to assume annul the sale? A case of the kind has just been heard in the Court of Appeal. A man expended 300*l.* in purchasing cottage property in Leyland. Not a word was said to him about the local authority having given notice that paving, flagging and sewering works were to be executed according to plans by the local surveyor. The Vice-Chancellor of the County Palatine of Lancaster decided when the case came before him that the particulars of sale were not full and fair, as one important fact which might affect the value of the property was concealed, and the purchaser was declared to be entitled to compensation according to one of the conditions, which provided that if any error were discovered the sale was not to be annulled, but compensation was to be paid, the amount being fixed by two referees. The Master of the Rolls, in his judgment, said the non-disclosure of the notice was not material, and could not have affected the value of the property. That being so, it could not be said there was any error, misstatement or omission of particulars. As Lord Justice Rigby and Lord Justice Collins agreed with the Master of the Rolls the vendor's appeal was allowed. An action of the kind is rare, and the decision of the Court of Appeal will suggest to purchasers that it is more economical to accept their liabilities. If, however, in such cases an intending purchaser had demanded information from the vendors about liabilities to local authorities the decision of the Court would probably have been different.

The Charity Commissioners have prepared a draft scheme for the regulation of a charity connected with the St. Mary's Roman Catholic Church, &c., at Moorfields, or, in other words, to dispose of the money obtained by the sale of that building. Four competent persons—one ex-officio and three co optative—are to be appointed, the ex-officio trustee to be the person for the time being exercising episcopal jurisdiction over Roman Catholics resident in London. The trustees, as soon as may be, are to erect upon the site in Eldon Street and Sash Court, Finsbury, purchased under the authority of the Charity Commissioners, a church and presbytery and other buildings, and may apply for the purpose a sufficient sum of money, to be raised, if needful, out of the capital endowment of the charity. The trustees may provide proper buildings for schools in connection with the church either by erecting new buildings or by acquiring, altering or adding to any existing Roman Catholic schools, or otherwise. A fund of 2,000*l.* stock is to be set aside for repairs of fabric, fittings and ornaments of the church, presbytery, &c. The following sums are to be raised out of the capital endowment:—Towards paying off any mortgage on the site of the Roman Catholic Cathedral in course of erection in Westminster, 20,000*l.*; in or towards the completion of the cathedral, 50,000*l.* Subject to the payments aforesaid, the yearly income of the charity shall be applied:—(*a*) As to a yearly sum of 400*l.*, for the support of St. Mary's Church and schools; (*b*) as to the residue, for the support of the cathedral. The property belonging to the charity consists of over 16 acres of land at Wembley, Middlesex, with Nos. 4 and 5 Eldon Street, Finsbury; Nos. 3, 3A, 4 and 5 Sash Court, Finsbury, not built upon; a strip of 300 square feet (all agreed to be purchased for the charity); and a sum of 172,000*l.* unpaid balance purchase money for old site at Moorfields, part of which sum is to be appropriated for the purchase of the last-mentioned property.

The town of Remagen, near the Rhine, contains a church of which the choir is supposed to date from A.D. 1240, other parts belonging to later periods. As the building had become too small for the increased population, and as a large part was in a dangerous condition, it was recently decided to erect a new building. Although the town was not considered of much importance, yet from its position it has been made a battlefield during many centuries. When the Romans gained possession of it they erected a fort surrounded by a wall, and it is supposed the old church was erected on the site. In the course of the building operations which are now in progress excavations were made, and after going down for 3 or 4 feet it was found that the ground might have had a notice set up at a very early age inscribed, "Rubbish may be shot here." The prehistoric midden-heap has been of extreme interest to archæologists, and the fragments of every kind which have been found at Remagen seem to show antiquity under a new aspect. For instance, it was supposed that the Romans called the place Regomajus, or Regiomajus, but as a fragment of a tile has been found among the rubbish inscribed Rjcom, it is concluded that the Roman name of the place was Ricomagus. That is likely to be an important discovery for clearing up some topographical difficulties. The construction of the walls is also a revelation, for the remains show that in Remagen, as in Rome, several materials were used; the inner part differed from the facing, and tiles were largely used to tie the faces and the interior. The builders were evidently aware that from its position the fortress would be liable to inundations, and took precautions to secure the building against them. It is supposed that the Roman fortress lasted till 1128, and since then the town has been repeatedly destroyed. After the Thirty Years War not more than sixty houses were left standing. Beneath the present streets and habitations there must consequently be remains of towns which were unlike in character. Remagen resembles Hissarlik, and if another Schliemann were to arrive, and be attracted by the place, he would find much to reward him.

It was at one time believed that the oldest map was that known as the Peutingerian Table, which was supposed to be a product of the third century, but later inquiries show it to be no older than the twelfth century. It is now generally held that a still more ancient specimen of map-making is a mosaic in Madaba, Palestine. It formed a part of a Byzantine church, and was used as an adornment for the floor. Evidently the artist anticipated the pictorial cartographers of modern times, for an attempt has been made to suggest the character of some of the scenery in Palestine. Practically the greater part relates to that country, and the number of names which are given cannot fail to be useful to modern explorers.

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: WEST FRONT, FROM NORTH-WEST.

The designer of the west front of Lichfield Cathedral, when he decided to employ statuary to a large extent, did not care about enhancing the effect of the figures by deep shadows. Accordingly the majority of them are outside the walls of the building. There is no clue existing to the subjects which were selected, but it may be assumed they represented patriarchs, prophets, apostles, who were associated with Scripture history. They were no doubt accepted as having some claim to be true representations, for in Mediæval times people were not over critical about veracity in portraiture, and the sources from whence likenesses were derived were not scrutinised. The placing of the statuary in full light was not an advantage artistically, for it must be allowed that the majority of the figures appear as if they were introduced as an afterthought, and produce the effect of being stuck on, instead of being provided for by niches in the masonry. Among the figures there are very few which can be considered as ancient, and among the modern works the nineteenth century is represented as well as former times. Over the doors and under the west window there is a long line of kings which are comparable with a similar series in Notre-Dame, Paris. In the latter, however, all the figures are standing. It might also be supposed that when James II. repaired the great west window an effort was made to recall the rose window which is to be seen above the kings in Paris. But the result was not successful, and in the modern restoration the seventeenth-century tracery was replaced by that which is seen in the illustration.

OFFICES, SOUTH MALL, CORK.

DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY. PERSPECTIVE VIEW. ELEVATION TO NEWGATE STREET. ELEVATION TO COURTYARD. COURT FLOOR PLAN.

THE INSTITUTE OF PUBLIC HEALTH.

THE Section of Architecture and Engineering of the Congress of the Institute of Public Health at Aberdeen conducted its operations under the presidency of Mr. John Honeyman, R.S.A. In the course of his address he described the science of construction as the oldest of sciences, and they could frankly say it showed no signs of decrepitude, but kept well abreast of the sister sciences in works of beneficence. Comparing the rude works of the aborigines with such great works as the houses now being built in our great cities or with the stupendous works now being carried out in the valley of the Nile, they were impressed with the enormous strides which construction had been making in recent years. On the engineering side the chief works connected with health were water supply, drainage, sewage disposal and the disposal of the refuse of the towns. The question of the proper ventilation of the dwelling-houses of both rich and poor was also being forced upon them more and more, and the most being made of fresh air and other hygienic agents. But they were losing sight of proper ventilation in the erection of the later class of houses, which had not the abundance of airiness of ancient structures. In the houses which were built to hold together only to sell they found the unintentional method of ventilation, but of the very worst description, because the ventilation was chiefly low down from the floor. He had been often in a crofter's cottage consisting of a but and a ben, where the walls were low and the windows small and not meant to open, and he never had the consciousness of any bad odour there. In many of the modern two-room dwellings which they entered the offensive smells made them beat a hasty retreat. He attributed the good health of the crofter and his wife, to whose cottage he referred, and who had reared there a family of ten, to the unintentional system of ventilation, the walls of the cottage being built dry and the air getting access to the different rooms in all directions. The only other house he remembered to have been in that was as well ventilated was a house of a very different kind, viz. Lord Kelvin's. In this case the ventilation was devised by Professor James Thomson, Lord Kelvin's brother. The principle on which the ventilation was carried out was that air should be admitted in abundance, so as to amply supply all the rooms and in such a way as to cause no discomfort. The method of applying this was that air was admitted into the central part of the house and conveyed into the various rooms by means of openings at the top of the doors. The openings were fitted with shutters, which served to direct the air towards the ceiling. The idea of this was that as the air went on its course it lost its velocity and gained in heat. A large number of the houses built at the present day were built by speculative builders, and they were only constructed so that they should look well and hold together until they were sold. Another most important subject they had to deal with was the health of their large cities, the death rate in some of which was abnormally high. The want of cheap enough houses for the poorest class was really at the bottom of it, because if the poor could not get houses they shared them with others to pay the rent, and swelled the system of taking in lodgers. But even though they had enough of these houses, they had a great deal to do to instruct the occupants how to act. Their habits were also at the root of the immense amount of mortality. Of course, there was no difficulty about the housing of the artisans; it was with the very poor. And how many of them were poor through unavoidable misfortune? Their school boards might do more in the way of instructing the young brought under their hands in the elements of sanitation, sobriety and a real respect for the feelings and rights of other people. Drunkenness was the greatest obstacle they had to sanitary reform, and the death-rate was more increased by this and its consequent misery in the course of one year than in the course of ten by all the defective drains and defective plumber-work. Mr. Honeyman concluded by referring to the architecture of Aberdeen, and said that, looking to the building they were met in, they could congratulate the citizens of the Granite City that the power of her traditions seemed still to survive, and that they had still among them successors to the Gibbs, Simpsons and the Smiths of bygone years.

Architecture and Hygiene.

Mr. James Souttar (Aberdeen) read a paper on "Architecture and Hygiene." He dealt with his subject under two heads —architecture applied to the hygiene of the house and architecture applied to the hygiene of the city. Dealing with the first head, he said that frequently in the erection of a house there was no choice of soil, but if there were architectural skill it might be possible to build a healthy house in the mud of the Adriatic, while without architectural skill it might be possible to build an unhealthy house on a site that had absolutely everything in its favour. Where a choice of site could be got it was, as far as possible, desirable that the site should be of such a nature as to allow sunshine at one time or other during the day to enter the rooms of the house. The subsoil was also a very important consideration, and in nothing more than in dealing with this matter was the skill of the architect required. As regards the hygiene of the city, Mr. Souttar said that a general scheme or plan for the beautifying and the laying out of cities in a manner as conducive to the health of the inhabitants as possible should be in the hands of every council. In such a plan long streets should be broken up by squares, &c., railways should be so constructed as not to require the yielding up of beautiful valleys, and the streets should be laid out in a tasteful and at the same time useful manner.

Dr. Francis Ogston (New Zealand), in referring to the President's remarks on the relation of drink to squalor, said that the poorer classes of this country had no place to go to but the public-house, and if they abolished squalor they would abolish the curse of drink.

The President said there was a great deal in what Dr. Ogston had said, but he must remember that the one thing acted upon the other, and there was first the drink and then the squalor.

The Architecture of the Twentieth Century.

Mr. Banister F. Fletcher (London) read a paper on "The Architecture of the Twentieth Century." Public health, he said, would be the watchword of the new century, and architecture was public health in its best and broadest sense. Architecture had to deal with the healthy arrangement of buildings, while there was no doubt that living amongst beautiful buildings promoted a healthy condition of mind. How could they expect children brought up in the slums of London to develop into good citizens? Something was being done in the extermination of the slums, but as yet only a beginning had been made. The houses should be constructed so that plentiful sunshine should find its way as far as possible into all quarters of the cities. The appointment of a minister of public health was, he thought, an absolute necessity. Speaking of the architecture of the future, he said the spaces provided by architects at dwelling-houses for the reception of refuse would probably be abolished. In public buildings nothing that could be called mechanical ventilation would be adopted on account of the great expense. In theatres, &c., great improvements would be effected in the provision of pure air. People, on account of the rapid means of travelling, would probably live to a great extent in the country, while factories would be constructed in the country, with cottages for the workers.

Mr. Cecil (London) said there was one point on which Mr. Fletcher invited discussion: that was the use of gas stoves. It was possible to use gas stoves for heating and cooking without any injury to health, and he was also sure there were immense numbers of gas stoves in use which were hostile to healthy conditions. Unless perfect combustion was insured the promiscuous use of gas stoves would be dangerous to health—not in the way of fatal illness, but in the lowering of vitality, which rendered the body more susceptible to the attacks of the enemies of human life.

Mr. Riddell (Suffolk) thought that something might be done in the way of improving the roofing of houses.

Councillor Cooper (Aberdeen) stated that recently there had been introduced into Aberdeen a system of roof known as the Mansard roof, but the common complaint with regard to these was that they were extremely cold in winter and very warm in summer. He was sure if they were to improve upon anything in the twentieth century it would be the adoption of some arrangement to take the place of these Mansard roofs.

Mr. Fletcher explained that the adoption of Mansard roofs was for the purpose of giving practically square rooms without the expense of walls; but he agreed with Councillor Cooper that such objections were urged against them.

Fever Hospital Construction.

Mr. R. Morham, city architect, Edinburgh, contributed a paper on "Suggestions on Fever Hospital Construction." He referred to the generally conceded need for fever as distinct from general hospitals, and pointed out the necessity of employing competent architects; the desirability of supporting the architect with ample but not extravagant instructions. There was no distinction between ordinary and fever patients; the one class being in hospital for their own benefit chiefly, the latter not less so for that of others. The latter had a special claim to have ample provision for requirements, beyond the mere treatment of their trouble, to while away the tedium of their constrained, or in some cases even enforced, seclusion. Mr. Morham then went on to describe the stages through which patients passed in ordinary course in hospital treatment, and for illustration of the subject exhibited a block-plan of the hospital now in course of erection for the city of Edinburgh, and on it traced the progress of the patient through reception, observation, ordinary isolation and discharge blocks, referring also to mortuary, educational and ambulance blocks. As to the staff quarters, he specially dwelt on the risks run by fever nurses, and the need for every possible means being taken to maintain them in the best possible health condition by means of ample provision for their comfort and healthy recreation when off duty. After dealing with the kitchen, dining-room, store, dispensary and laundry blocks, he concluded by pointing out that the object in view in all such institutions was to do the best possible for the patients during the period of their illness, and for their comfort and recreation during convalescence.

Dr. Skinner (Willesden) said it was important that each ward should be large enough to accommodate a sufficient number of patients for a nurse to take charge of. He thought this was a better arrangement than having two smaller wards.

Mr. Morham said he agreed with Dr. Skinner. In a great hospital it was always desirable that the wards should be large enough to give employment to one nurse, but in small hospitals this could not always be done.

An Ideal Workman's Cottage.

Councillor Cooper (Aberdeen) read a paper on "An Ideal Workman's Cottage." His proposal, he said, if it were carried out, would enable them to remove the necessity for a large section of the workers living in tenement houses, and would also in some measure prevent the overcrowding which manifested itself in every growing centre of population. The Legislature having affirmed the principle that public funds may be employed and the public credit utilised to provide properly equipped sanitary houses for working people, the question confronting them was what particular kind of house or houses might be erected to meet the needs of the case. There could be no hesitation in coming to the conclusion that the ideal scheme was that of cottages on the outskirts of the cities, and in what he had to say he wished it to be kept in mind he was confining himself to local circumstances. They had almost every kind of cottage in the city of Aberdeen, but the cost of building was so great that they were beyond the reach of the working class, renting as they did from 18*l.* to 40*l.* and 50*l.* The plan he had prepared consisted of a single cottage with ground floor and attics, comprising a living-room, parlour and four bedrooms, with scullery, bath-room and a back wing. It was a Scotch custom to prepare and eat food and to sleep all in one apartment, but in his plan the bed in the kitchen was done away with and a number of small bedrooms provided after the English type of workmen's houses. After describing various plans in the internal arrangement of the houses, he said he thought that municipalities might with advantage purchase suitable ground and build their cottages in detached blocks of, say, two, three and four cottages, some of them with and others without a back wing. If this were done, some artistic taste could be shown in the laying out of the ground, and a considerable saving effected by reducing the number of exposed gables. As to the cost of these cottages, the figures he could give would be of little value, the cost of building differing so much in different towns and at different periods in the same town. Architects of experience had informed him that the cost in Aberdeen, confined to plain rubble masonry in workmen's houses, ranged from 4½*d.* to 5*d.* per cubic foot. With the lowest of these figures the cost would approximate to 200*l.* without the scullery, and 300*l.* with. These figures were high, and the Act of 1890 would be of little service to them unless the period for repayment were extended to at least 100 years for both the ground and the building. Of course, the cottages referred to would not serve the purpose they had in view if they could not be let for a rent of, say, 10*l.* and 12*l.* respectively. It was not part of their present purpose to discuss the various means by which such an object should be accomplished. He was convinced that in cities which are overcrowded the authorities would not be doing their duty if they did not take measures to prevent the growth of an evil which had been fraught with such dire results to the physical and moral welfare of humanity.

Mr. Fletcher (London) said he was afraid the problem was one that could not be solved. It was a question of pounds, shillings and pence, and philanthropy could not enter into it. A poor man was not a pauper, and unless a cottage could be provided at a price that a working man could pay for, it was perfectly impossible to erect an ideal workman's cottage. The whole thing, so far as he could see, seemed to be bound up in the question of easy and cheap transit.

Alderman Price Lewis (Wolverhampton) said he thought the ideal workman's cottage was such as had been stated by Mr. Cooper. The difficulties were largely financial, and the solution lay more in cheap transit than in anything else. The Government having thrown the burden of responsibility on municipalities, they ought to grant as long periods as reasonable for the repayment of loans, and even a longer period for the payment of land.

Mr. Dodd (Halifax) thought the question resolved itself pretty much into what a working man could pay. A man with 20*s.* or 25*s.* a week, and having a family to maintain, could not pay 5*s.* or 5*s.* 6*d.* a week for rent.

Rev. Alex. Webster (Aberdeen) said he did not think it was possible to "dodge" the landlord by proposing to take the mass of the people to the country, and some means must be devised for getting the land into the hands of the municipal authorities without paying for it. He did not think it advisable to put workmen's homes too far from their work, as either their working day would be increased or expense would be caused in travelling.

Mrs. Dockrell (deputy-chairman of Blackrock Urban District committee, Dublin) said that in looking at this question the main thing to be considered was the standard rate of wages, and working from that point of view they must make rents such as would make it possible to provide a home for every family. Looking at it from a woman's point of view, the ideal home was a cottage wherever it could be got. Each family should have privacy, particularly for the sake of the woman, and she considered it positively dangerous the huddling together of women in flats.

The Secretary said Mr. Cooper had given them an excellent paper, but there were many difficulties connected with the question. He supposed there were in Aberdeen, as well as in other places, a large class who were obliged to live on incomes of about 18*s.* or 20*s.* a week. These people could not afford to pay more than 2*s.* 6*d.* a week, and he was glad to hear that in Aberdeen handsome buildings were erected at rents as low as 5*l.* The great objection to working people living in the outskirts was that their children would not so easily get employment; but he thought that these cottages would do very well for the better class of workmen, and their removal would make room for the poorest class. It was in regard to the housing of the poorest class that the difficulty was, and he thought the cottages suggested by Councillor Cooper were beyond the reach of the poorest. If people could not pay the rent of such cottages, they ought not to occupy them at the expense of others. Indeed, in dealing with the whole question of the housing of the working classes there should be none of the pauperising element introduced.

House Drainage.

Mr. Gilbert Thomson, C.E., Glasgow, contributed a paper on the design and testing of house drainage, considered in their relation to each other. He said he was to consider the question entirely from the structural side, and he started from the accepted view that a satisfactory drainage system should allow nothing to escape into the house or into the soil on which the house stood. The most popular test at present was the well-known "smoke test." In many respects it was useful, but it was responsible for a great amount of false security. The statement that a drainage system was proved to be tight by means of the smoke test was scientifically absurd, as such a test could never give proof of the air-tightness of a drainage system. It was often quite as absurd in practice as it always was in theory. A test which was to be of any value as a proof of soundness must give a positive and not a negative result. The only tests in use which gave such a result were the water test and the air test. Each of these showed absolutely that the substance used in testing remained in the system, not merely that it had not been found escaping. The application of the water test was limited, because it was impossible to apply it with uniformity to the different parts of the system. The air test, on the other hand, could be applied more readily than the smoke test, and was applicable wherever the smoke test was applicable. The smoke test went on the principle of assuming that the drainage system was good until it was proved to be bad. The air test assumed that it must be proved either to be good or to be bad, and it supplied a very simple and sensitive method of proving it. It did not show where the leaks were, and was not therefore a convenient test for workmen tracing defects, but for an engineer or a sanitary official, whose object was to certify that work was satisfactory, or merely to detect it if it was not, the air test was theoretically perfect. The constant experience of two or three years with a very simple appliance (exhibited to the meeting) had proved that the practical difficulties of its application are trifling, and that by its use the high standard of construction, referred to as being a necessary accompaniment of simplified design, could be proved not only to be attainable, but, in any given case, to have been attained. Economy and efficiency combined to demand simplicity of design, and a high standard of construction and testing.

Dangers of Railway Travelling.

Mr. E. Durant Cecil, C.E. (London), read a paper on the dangers to public health from railway carriages and stations. In suburban carriages on busy lines each passenger was brought into actual or potential contact with 50,000 travelling companions, and this implied a very considerable risk of disease. The most serious dangers connected with railway travelling were being now more carefully noted than ever, and in a very elaborate series of experiments carried out by the imperial health authorities at Berlin it was found that 700 bacilli per square inch might be present on the walls, seats and floors of carriages which appeared quite neat and clean. Moreover, vigorous cleansing did not banish, but only diminished microbes and retarded their multiplication.

It was agreed that the section of architecture and engineering recommend that the following resolution be passed by the Congress :—" That in the opinion of the Congress the attention of the various railway companies be called to the necessity of more efficient cleansing and the more sanitary construction of railway carriages, and also conveniences at the smaller railway stations, having regard to the question of the possibility of infection to passengers."

This was agreed to, and the section adjourned.

Housing of the Working Classes.

A paper, prepared by Mr. W. Malcolm Ormiston, architect, Edinburgh, on " Housing of the Working Classes, with special reference to the methods adopted in various urban and rural districts," was read in his absence. It was illustrated by many drawings, and traced the evolution of dwelling-houses from the primitive caves on the seashore and the one-roomed huts of the Highlands to the latest designs with all sanitary arrangements. They often heard it stated that the majority of the occupants of small houses would not take the advantage of such privileges, but would prefer to remain in the crowded areas, and as a class they did not wish to be disturbed and removed out of their dirt and filth. For the housing of the lower classes, his opinion was that a specially strong cheap house should be erected, simply housing them from the elements, having no timber furnishings that could be converted into firewood or harbour vermin ; no plaster that could be broken, with iron-hinged windows of small panes ; a good supply of water, water-closets and cleansing arrangements of simple construction and with a fixed means of direct ventilation, so that air could freely circulate throughout their dwellings in spite of them, for the majority of this fallen race had sunk beyond recovery, and in this life fresh air was about the greatest blessing they could bestow upon them.

Mr. Cameron (Greenock) thought that, as far as the housing of the working classes was concerned, Aberdeen ought to be congratulated on showing other municipalities a high standard and carrying it out with intelligence.

Rev. Mr. Bruce Taylor (Aberdeen) said the housing of the poor should be treated not only as an economic question, but as a moral one also. The gist of the question was whether they were to put up workmen's dwellings to pay their own way or to make provision from the rates for some loss, considering the present rate of feu-duties in big cities. Were they going to give municipalities a freer hand to pay out of the rates ?

Dr. Williamson said that it was not the working class which was giving the trouble, but the class which would neither work nor want. It was these classes—the submerged tenth—who kept the filthy houses.

The President said they had also to remember that it was not only the dissolute and lower classes who had to be provided with such accommodation, but also the large class of poor deserving people who were struggling to keep up their independence. The difficulty of the problem was, of course, increased vastly by the number of the dissolute and drunken, who, getting good wages, made no effort to get better houses, but took in lodgers, as had been said, to make more money to drink. And any improved accommodation that was provided for the workpeople should be erected in the city where they worked, as it was simply impossible to send them to the country.

On the motion of Mr. Ross (Clydebank), seconded by Alderman Purcell (Liverpool), a vote of thanks was passed to the President, and the sittings of this section closed.

SOMERSETSHIRE ARCHÆOLOGICAL SOCIETY.

(*Concluded from last week.*)

AFTER leaving Exford the next halt of the excursionists of the Somerset Society was at Winsford, one of the prettiest of Somersetshire villages, situated on the Exe, amidst woodland scenery of the most charming description.

Winsford Church.

The vicar (the Rev. Prebendary Anderson) received the members. He said :—I will not detain you many minutes while I express my pleasure in welcoming the members of this Archæological Society to Winsford. I fear we have not many antiquities of great interest to show you, except the beauties of the " everlasting hills " around us and the valleys of the ever-flowing rivers. But with regard to the church I cannot help contrasting its present state with that of forty-three years ago, when I first came to this parish. Then the west end was blocked up with a gallery, in which all kinds of music were discoursed without much harmony. The chancel screen was made up chiefly of the Royal Arms and the Ten Commandments—good things in their places (and the royal arms are interesting, being Jacobean)—but not suitable for a chancel screen. The church was filled with square and high pews, in which the farmers used to slumber comfortably. The church as you see it now has a peculiar interest, because its restoration was carried out by the late lamented architect, Mr. Sedding, or, I should say, according to his plans ; for this was his last work, and he died in my house before the work was finished, in the spring of 1891. The whole of the roofs of the nave and side aisles were renewed after the original design—some of the principals are retained in the new roof—the church was reseated with oak seats and a new floor laid. I think that this restoration will not come under the condemnation which I lately saw quoted in the *Spectator* of a " Neo-Gothic Forgery," " The Tinsel of Nineteenth-Century Ecclesiology." I would particularly draw attention to the tracery of the glazing in the windows, all from the designs of Mr. Sedding, and, I think, of exceptional beauty. It is not for me to point out to more experienced archæologists traces which are to be found of Norman, Early English (possibly even Decorated) and Perpendicular styles in this church. The hinges of the south door are to be noticed as not belonging originally to the door—being too large—indeed, the door is not hung on them ; probably they were brought here from some larger door at Barlynch Abbey. The niche in the porch seems to show the wheel of St. Katherine, to whom a side altar was dedicated in the church. I may mention that the porch was restored some years ago by Mr. Giles and the font reset by Mr. E. G. Paley. The chancel was done by the rector, Sir Thomas Acland, at the same time as the church, the architect being Mr. Ashworth, of Exeter. I will not detain you longer, except to say that I can show you at the vicarage some old books—very early editions of classical and other books—also a silver tankard of 1697, and to hint that it is as well adapted now as it was then for the use for which it was designed.

Mr. Buckle, in describing the architectural features of the church, said it was of the Perpendicular period, and there were two churches in the district built on the same lines. The church had been restored, but in such a manner as to retain its main features. Special attention was called to the windows, which it appeared had been introduced at different periods. The windows over the chancel were rather curious, and they seemed to be put in, in the absence of a clerestory, to lighten the roof. The position of the rood-loft was plainly marked, and was across nearly the bottom of the arch. The west tower was a fine example of the style of the western district of the county. It was very similar to the tower of Minehead and other places a little north from there. The tower stood out with a grand massiveness. The buttresses were perfectly plain square ones, standing a little way from the angles of the tower, a plan largely adopted in that district. Another feature of great interest was the font, which was a circular Norman one, and similar to those at Hawkridge and Withypool. There was also a little Mediæval glass in the church.

Winsford Manors.

Mr. W. Dicker, the schoolmaster, read an interesting paper, as follows :—Winsford Rivers and Winsford Bosing were the names of the principal manors of Winsford given in an old lease of 1756. Collinson states that in 1272 John de Ripariis held the hamlet of Wyneford of Amicia, Countess of Lisle. The perambulation of Exmoor, 1298, includes the "Villa de Wyneforde, etc., quam Ricardus de Ripariis et Stephen Beaumunde tenent" (Winsford Bosing being no doubt a corruption of Winsford Beaumunde). In the " Nomina Villarum " of 1316 the lords of the manor were Ricardus de Ryvers and Johannes de Acton. In the time of Fitz Joceline Bishop Alicia Roges gave to the church of St. Andrew at Wells the church at Winsford with all its appurtenances. According to Dugdale, William de Regny gave to the Priory of Barlynch a ferling of land in the manor of North Wynesforde, and the advowson of the church of that vill; while some time before 1268, by a gift of 200 marks from Hugo de Romenall, treasurer at Wells, the Prior and canons of Barlynch purchased a rent of 100 shillings a year and half a virgate of land in Winsford, together with the advowson of the church. There appear to have been conflicting claims to the church and land at Winsford, which were settled by the transference of all asserted rights to the Priory, Hugo de Romenall making peace by supplying to the Prior of Barlynch the means of compensating the authorities at Wells for the loss of the church. In 1280 the Priory endowed the vicarage with the tithes of hay, corn, &c , the vicar, Matthew de Molton, agreeing to pay a yearly rent of 10*s.* to the Priory. In the taxation of Pope Nicholas IV. the church was taxed at 12 marks, the vicarage 8 marks, pension of the Prior of Berliz, 10*s.* In 1453 the glebe lands were added to the vicarage, together with the house of the chaplain as a residence for the vicar, the latter undertaking to pay annually 20*s.* to the Priory, and to find at his own cost two processional wax candles, which should be used only at the time of procession as heretofore. The church was perhaps rebuilt about the middle of the fifteenth century, the glebe and vicarage house being added at the same time. At the Dissolution the rectory was valued at 9*l.* 10*s.*, and the lands 18s. 8d. Collinson states that it was granted to the Earl of Hertford. The name of Mr. Thomas Dyke occurs in a poor rate in 1651 as rated for the "sheaf tithe." Sir Thomas Acland, seventh baronet, married Miss Elizabeth Dyke, only daughter of Dr. Thomas Dyke, of Tetton, and the name of "Squire Ackland" appears in 1748, he having succeeded to the lands and part of the rectorial tithes of Winsford, belonging to Dr. Dyke. The church was dedicated to St. Peter before the Reformation, as shown by several Winsford wills, but afterward it became changed to St. Mary Magdalene. The Sunday after St. Peter's Day is still known as "Revel Sunday." According to the wills there were nine altars in the church, viz. St. Peter, B.V.M., High Cross, The Dead Light, St. James, St. Catherine, Our Lady of Pity, St. David and St. Anthony. During the eighteenth and early part of the nineteenth centuries the church was constantly in the hands of masons, carpenters and glaziers for repairs. During the years 1804-6 the sum of over 368l. was spent on the church, chiefly on the roof, which was then ceiled and plastered. There is no evidence when the old rood-screen was taken down. During the years 1800 to 1834 above 1,465l. was spent on the church, all of which was raised by rate. In 1890-91 the church was restored by Mr. Sedding and a local contractor at a cost of 1,200l. The bells were rehung and a new treble added in 1897, bearing the inscription "Pro Deo et Regina," at a cost of 150l. They had previously been recast and rehung in 1765 by Thomas Bilbie, of Cullompton, at a cost of 105l. It may not be out of place to remark that these sums were spent on the church when the yearly charges on the parish were very heavy. The poor rate was seldom less than 400l. a year, sometimes above 500l. and 600l., and the highway rate often exceeded 50l. The large sums spent on the church showed the zeal of the parishioners for the house of God, for while the church rate, when made, was compulsory, yet no sums were expended by the wardens, except the ordinary and regular charges, but what were ordered and sanctioned by the majority of the ratepayers at vestry meetings called for the purpose. At the end of each year the accounts were audited and passed and signed by two magistrates. The average yearly expenditure for the period 1800 to 1834 was:—Poor rate 473l., church rate 43l., highway 56l., a total average expenditure of 573l., all raised by rate in the parish. The old church accounts contain very few entries of great interest, being little more than moneys received and expended. It is remarkable that they contain but one entry relating to the change of religion in Mary's reign, 1558, "Except the tabernacle which is not yet paid for." A vicar, Ægidius Hillyng, was appointed in Mary's reign. He was deprived in 1560. The accounts of the Teithingmen of 1596 are interesting as showing the armour and weapons belonging to the parish. They included "one muskett, with his flaxe, twitch oxe, moll and rest." In 1589 the advowson of the vicarage was presented to Emmanuel College, Cambridge, by William Neale, auditor to the Treasury and alderman of the City of London. Charles Chadwick was the first vicar appointed by the college in 1594. In 1662 Joseph Chadwick, vicar, was deprived for refusing to subscribe to the Book of Common Prayer. The registers commence with 1660. They contain nothing more than the bare entries of baptisms, marriages and burials. In 1665 the plague, or some other sickness, visited Winsford with some severity, as there were thirty-two burials in that year, fourteen being in April and several in May. The brass tablet in the church is to the memory of the Lyddon family of Edbrooke, a farm on the Exe, about half a mile from the village. The first mention of Lyddon in Winsford is in 1561, when among the "dettes owed to the p.sshe" we find Nicolas Liddon iijs. iiijd. A deed in my possession, dated January 7, 1670, sets forth the purchase of Edbrooke (also called Brooke Sanford tenement) on a lease of three lives, or ninety-nine years, from Ferdinando Gorges, of Eye, cc. Hereford, the son of Mr. Thomas Gorges, of Heavitress, co. Devon, by William Liddon. In 1680 the freehold was bought by his son, Robert Liddon. William Liddon contributed two shillings to the benevolence granted to Charles II. in 1662. The will of Thomas Gorges, dated 1665, mentions his "Demesne of Edbrooke, in the parish of Winsford, which I purchased from my honoured nephew, John Sanford, gent., of Ninehead, Somerset." The Sanfords resided at Winsford for many generations; they came originally in the time of Edward I. The Lyddons owned and occupied Edbrooke down to 1894, when it was sold. Since 1664, a space of 236 years, there have only been seven vicars of Winsford, an average of above thirty-three years.

Considerable interest was shown in the ancient coat of arms in the church, which bears the following inscription:—

I.R. (Jacobus Rex), Ano. Dni. 1609.

"I advertise thee to observe the mouth of ye King, and that for ye word of ye oathe of God."—Eccles. viii. 2.

"Curse not the King, noe, not in thy thought, neither curse ye riche in thie bedchamber, for the fowle of Heaven shal cary ye voice, and that which hathe wings shall declare the matter."—Eccles. x. 20.

The Weir Rock.

The party then had a delightful drive through the Exe valley to the Weir Rock. This object is of considerable interest to geologists, as certain marks have been attributed to glacial action. Professor Boyd Dawkins, however, inspected the rock some time ago, and drew attention to similar marks in the quarry near by, giving it as his opinion that the grooves were caused by a moving mass of rock operating in a fixture.

Barlynch Priory was next visited. This is in a charming situation on the banks of the Exe, and the background is an amphitheatre of woods. The ruins are not extensive, as in past years the materials were carted away to serve in the construction of cottages. The Priory was formed, about 700 years ago, for the behoof of the Austin Friars or Hermits, who followed a rule attributed in ancient days to St. Augustine, the great Bishop of Hippo. The church was dedicated to St. Nicholas. In 1537 the Priory, with its appurtenances, was forfeited to the Crown. Thereupon altars and images were thrown down, tesselated pavements torn up, and odds and ends, spared by the rude hand of the spoiler, were scrambled for by the neighbouring churches. The churchwardens' accounts at Morebath make mention of tiles brought from "Barlye," as also of windows pirated from the same spot. At Huish Champflower a large and very beautiful window, of the Transition period between the Decorated and Perpendicular styles, with two quatrefoils in the tracery, came, says tradition, from Barlynch, while the Priory's second bell, bearing the inscription, "Protege, Virgo pia, quos convoco, sancta Maria," is in the belfry at Dulverton. The screen and some of the seats are in Brushford Church.

On the third day the members of the Association left Dulverton at 9.30 A.M. in brakes for Bampton and Tiverton. On arrival at Bampton they were shown over the Bampton quarries, now owned by Mr. Dunning, J.P., C.C., and worked by a company. The party were met by Mr. J. Yates, the manager. Mr. Ussher, F.G.S., briefly described the geological formation of the stone, and said a distinctive feature of the Bampton stone was the large amount of "chert" or flint it contained. That made it a superior road stone. Mr. Ussher also mentioned the interesting fact that St. Peter's Church at Tiverton is built from the stones of a worked-out quarry at Bampton. These black limestone beds of the culm measures in the carboniferous formation have been worked for at least 600 years.

St. Michael's, Bampton.

The party next visited the parish church, which was described by Mr. J. T. Periam, of Bampton, to have, in his opinion, originally consisted of chancel and nave. He was under the impression that the tower was added at a later period, partly owing to the class of stone used in it. The walls came from the ordinary rock of the country, but the tower was built from the limestone of the neighbourhood. Probably in the fifteenth century when the Bourchiers were Lords of Bampton, the north wall was added, but whether there were chapels at the eastern and northern ends he could not say. A blocked window in the north aisle seemed to indicate that some building existed there. The screen was now in its original position, but it was unfortunately mutilated at the end of the fifteenth century. Bampton Church was restored a year or two ago. The roof was dilapidated and the job looked almost hopeless, but most of the old timber had been put back. The quaint stained-glass window was probably inserted by the second Earl of Bath, 1540. In a vault under where the organ now stood was found a tomb containing several ridged coffins, but the workmen did not unfortunately take the dates. The tomb was understood to be that of the first Earl of Bampton. There was also a monument to the Tristram family, who used to live at Duvale. There were also tombs of the Lucases, who formerly lived at the castle and owned much property in the neighbourhood. The Bourchier knot could be seen on the screen, and also on the roof bosses.

Mr. C. H. Samson (Taunton) supplemented Mr. Periam's account with some information as to the state of the church before the restoration took place. He spoke mainly from an architect's point of view. The south wall leaned 2 feet in one place, and 11 inches in an opposite direction in another place. By means of oak corbels, however, the wall, which was solid, was still allowed to lean, whilst the roof was kept straight. The roof was in a bad state, propped up in all directions, but much of the old oak was reused. It had many excellent bosses, also of oak. He did not know what they meant—most of them were of foliage. The arcade fell over quite 2 feet, and crushed the timbers in the aisle; they managed to lever it up straight when the roof was on. The well-carved screen was found under the chancel arch, and was brought out exactly as found. Very little was done to the chancel.

On arriving outside the church Mr. Edmund Buckle pointed to a piece of stone over one of the south windows, which he said was a trade mark. There were numbers of them at Tiverton Church, which was built by woollen merchants.

Bampton "Mote."

The "Mote" was next visited. It is supposed to be the site of Bampton Castle, but no buildings remain. Mr. Periam said he thought the earthworks were artificially made, and that the mound was prehistoric. In close proximity was the "Grove," probably used for Druidical rites. It was from a Saxon word meaning a meeting-place that the mound got its name "The Mote," and it was undoubtedly the meeting-place of the Hundred of Bampton, which formed the most western portion of the Saxon settlements in Devon. By the laws of King Edgar the Burghmote, or Court of the Borough, was held thrice a year. Bampton was the burg, or fortified place, and head manor of the hundred. The parish was still divided into Borough East, West and Petton "quarters," and the ancient office of portreeve was still in existence. In 1336 Richard Cogan had a license from the Crown to castellate his mansion house at Bampton, and to enclose his wood of Uffculme and 300 acres of land for a park. Mr. Periam thought the site of the castle was on a lower level than the mote, and he pointed out the earth fortifications in what is now an orchard.

Mr. Periam was thanked for his recital.

Tiverton Almshouses.

Mr. Buckle said the almshouses in Gold Street were comparatively modern, except part of the chapel, the really interesting building being in another part of the town (Westexe). A curious feature was that one entrance, by stairs, served for all the houses.

Blundell's School, Tiverton.

Assembled on the lawn in front of Old Blundell's, the members were informed by Rev. Donald Owen that he was at school there at the age of ten and stayed there until 1840. He distinctly recollected Frederick Temple, the present archbishop, who was both a boarder and a day boy, and whose family lived at that time at Uffculme. He remembered Temple winning the Blundell's scholarship, which sent him to Balliol College, Oxford. Perhaps the most famous schoolboy contemporary with him (Mr. Owen) was Blackmore, the author of "Lorna Doone," and with whom he corresponded to the end of the famous novelist's life. Great changes had taken place in Blundell's School. It was founded, as they knew, by Peter Blundell, a clothier, of Tiverton, who began as a boy in a small way, being the owner of one horse, with which he carried some serges to London, and ended by becoming an eminent citizen of London. Wishing to bestow some of his wealth on his native town Blundell founded this school, at the suggestion of Justice Popham his adviser, the school dating from 1604, although Peter Blundell's will was of a somewhat earlier date. Not content with building the noble grammar school, as it was then and is now, Blundell's nephew and clerk, Chilcott, founded a second school, which still flourishes at Tiverton. Blundell's School had varied fortunes, its ups and downs, like every other school, up to the time when the boarders became the main body of the school. Originally meant for all, the school green gradually became absorbed by the boarders and was walled in, which led to angry feeling in the town and a law suit, by which the boarders were declared to be no part of the original foundation, and the school was restored to what Peter Blundell founded it for, namely, a school for Tiverton and the neighbourhood. But the result of that law suit was a dead loss of 7,000*l.* to the funds of the school. There was also a very heavy fall in numbers until a fresh application to the Court was made, and the boarders were brought back again. It was then, however, a very reduced school, and in later years the playground was found to be too small for modern games. Consequently the governing body of the day, mainly assisted by Archbishop Temple's wise counsel, determined to sell the ground in which they were standing, and bought about 15 acres of ground about a mile out of the town, which he wished the Association had time to visit, and built a new school there. They transferred to it, they hoped, all the old traditions, and the school was flourishing, gaining some of the greatest honours of the present day, and contributing to all branches of the learned and other professions boys who were doing honour to the name of the school. Their numbers had been as high as 280, but, fluctuating like all schools, were now 220. They kept up the old custom of speech-day, and the chairman this year would be their courteous host of that day, Mr. Hollond. The members of the Association would like to know what changes had taken place inside Old Blundell's. The whole property was bought by a wealthy brewer (Mr. Ford), who was also a philanthropic man, for he had erected close to the old school almshouses for his aged employés. He had transformed the old school into five private dwelling-houses without changing very much the exterior architecture of the building. On the right was the headmaster's house, in the centre the lower school, and beyond it was the upper school, with a roof of timber brought from the wreck of the Spanish Armada. Learned members would see how the dates coincided. At all events, when the roof was remodelled one of the workmen showed him some of the timber through which holes had been bored, apparently for bolts used in shipbuilding. Referring to famous head masters, Mr. Owen named the Rev. Henry Saunders, tutor of Dr. Temple, Dr. Bolton, and the Rev. Thomas Wood, his (Mr. Owen's) great-grandfather, to whom members doubtless noticed a memorial in Bampton Church. Mr. Wood was a personal friend of the Bishop of his day, and was once riding in his carriage (then accounted a great honour) past Old Blundell's when the Bishop, noticing a Latin inscription over the gateway, asked Mr. Wood to translate it for him, as his eyesight was not good. The old Vicar of Bampton did so as follows :—

> Within these walls two mighty monarchs rule,
> One in the house, the other in the school ;
> But see, my lord, a sad disaster—
> He rules the boys, but she the master.

His married friends would, he hoped, all agree with him that that was a piece of ancient history never to be reproduced.

St. Peter's, Tiverton.

A move was then made for St. Peter's Church, which was most ably and lucidly described in its most interesting architectural features by Mr. Edmund Buckle. This church was, he said, of a totally different character to anything the Association had seen before in this meeting. He had had occasion before to mention the poverty of the country the Association purposed going over this year, and had pointed out that it was hardly reasonable to expect that they would have elaborately carved work in the churches about Exmoor. But although Exmoor was in itself a poor district, he took it that all the hills around must have been covered with sheep, and Tiverton was the great market for the sale of the wool. They knew all through Somerset that wherever they found much of the woollen trade they invariably found an exceedingly rich church —a notable tower, or screen, or something or other which denoted the wealth of the town, or it might be only a village, where the merchants made their money. Here in Devon they found the same thing. Tiverton appeared to have been an exceedingly thriving town dependent mainly upon the woollen trade, and the merchants of Tiverton spent their money very freely for public objects. The school they had just been to was an example of that, founded by a merchant who started from Tiverton ; the almshouses (Greenway's) were another, and there were at least two other almshouses and one other school founded by Tiverton merchants. The Greenway's Almshouses they had passed was founded by the same man who built the whole of that magnificent side of St. Peter's Church (the south side) on which they were now admiringly looking, and the chapel, which stood out from the nave and towered over the porch, was also due to that same John Greenway, who made his money in Tiverton about the year 1500. Mr. Buckle having stated that next to nothing was known about the life of Greenway, described in detail the beautiful work he caused to be erected between the years 1515 and 1518, especially noting in the carving the many emblems of Greenway's mercantile career. The church was also remarkable for the number of trade-marks carved about it, and there was such a similarity about these marks that the merchants of the day must have had difficulty sometimes in identifying their own. The carving on Greenway's chapel also included ships represented as sailing in a row, and near the parapet was a remarkable series of small figures representing the leading incidents in the life of Christ. There were also numerous coats-of-arms and monograms, among them that of the Courtenays. About this time there resided at Tiverton Castle the Countess of Devon, who was the daughter of Edward IV. She was then the great lady of the place, and all the merchants of Tiverton thought it advisable to give prominence to her arms in their emblems.

Inside the church Mr. Buckle said there was no hint of Greenway on the north side. The work on that side was done by a merchant whose name began with "S," and that was all that was known about him. His initial appeared on some of the capitals. There was on that side of the church a Norman doorway in a remarkably good state of preservation, and here also was probably the Courtenay chapel. It must have contained many magnificent monuments. It was probably destroyed in the Civil War. From end to end the north aisle was modern. It was much narrower within the last fifty years, when the outside wall was taken down and rebuilt. Mr. Buckle concluded by drawing attention to two valuable paintings in the church, one by Cosway, the celebrated miniature painter of the last century and a native of Oakford ; and the other by Crayer, a contemporary of Rubens, whose style he imitated. The modern vestry contained a large library of old books and documents. The waggon roofs of Greenway's chapel and the porch were also noted.

Tiverton Castle.

The members next visited Tiverton Castle, in close proximity to the church, where the Rev. Donald Owen explained that the building dated from the year 1107. It came early into the possession of the Courtenay family. Afterwards the family broke up into different sections, and the property ultimately got into other hands until it came into possession of the ancestors of the present Lord Chancellor Giffard. He built what was now called Giffard's Court. The property next passed into the hands of a Mr. West, who intermarried with the Carews, and the castle passed into their possession, and the late Carew, Baronet, lived there. It now belonged to the Misses Carew, of Haccombe, who held it in entail for the present baronet. It was occupied by the great Irish family of Moore, two members of whom were at the front. The family wished that every facility should be given the Association for viewing the grounds. Mr. Owen was asked to thank Mrs. Moore for this privilege.

We are indebted to the *Somerset County Gazette* for the report.

SHROPSHIRE ARCHÆOLOGICAL SOCIETY.

THE annual excursion of the Shropshire Archæological and Natural History Society took place on the 1st inst. The portion of the county chosen for exploration was the extreme south bordering on Worcester and Hereford. The party of members travelled by the 10·5 train to Ludlow, where they were met by Mr. Fortey, who kindly undertook to guide them for the first part of the day. Mr. Henry Weyman, who was to have given them the benefit of his local knowledge in the latter part, was unavoidably absent, and his place was kindly taken by Capt. Williams-Freeman. Carriages were waiting at Ludlow station, which first conveyed the party as far as the "pipe track" of the Birmingham Waterworks scheme on the way towards Caynham Camp. The members proceeded on foot from the "pipe track" (which certainly does not compare in picturesqueness with the great aqueducts of the Romans, but probably will serve all practical purposes better), and ascended the camp on the western side. The northern side needed little defence beyond the natural steepness of the hill, but on the east and south it was protected by a strong mound and ditch, while on the west the original elliptical entrenchment has received a rectangular addition, possibly from the hands of the Romans when they had dispossessed the British owners. The party walked upon the mound as far as the southern gateway, admiring the views of the surrounding country. A halt was then made while Mr. Fortey read a short paper on the camp and the little that is known of its history. The members then walked down to Caynham Church, where the chief objects of interest are a churchyard cross of elaborate late fourteenth-century design, but very much weathered and minus the head of the shaft, and a remarkable chancel arch of Early English date. The base of the tower has Early English lancet lights, and the font is apparently of the same date, but has been re-chiselled. Unfortunately there was no one to meet the party at the church who could give them the benefit of local knowledge as to the extent of the rebuilding at the restoration in 1885. The early registers, said to date from 1558, and the church plate were not shown. The carriages were rejoined at Caynham and the drive was continued to Whitton Court, where Miss Mills and her sister most kindly welcomed the members to their beautiful old house and showed them its many points of interest. Whitton was for generations the home of the Charlton family, to one of whom, Sir Robert, son of Robert Charlton of Tern, is ascribed the building of the present house in the early years of the seventeenth century, though part is undoubtedly older. A pane of glass formerly in the drawing-room window has "A.D. 1653" scratched upon it, and the heraldic paintings in the hall are dated 1682. The whole is a delightful specimen of an old manor house with its old furniture and fine oak panelling. After studying the tapestry of the large room over the hall and admiring the half-timbered work of the back of the house, the party reassembled in the hall, where refreshments had most kindly been provided, and after hearty thanks to the Misses Mills, resumed their places in the carriages for the short drive to Whitton Church, a chapelry of the large parish of Burford. Here again the archæologists had to read the history of the building for themselves from its stones. It is mainly of transitional date, when Norman work was passing into Early English. The font is a graceful specimen of that date, and the south-eastern window of the nave shows that originally, before the addition of the present chancel, Whitton had the same arrangement for sedilia as was seen later at Greete. From Whitton the party drove by narrow lanes to Greete Church, where they were met by the vicar, the Rev. W. H. Badger. This church, like that of Whitton, is of twelfth-century date, restored, and a chancel arch inserted in the present century. The arrangement of the sedilia and piscina is curious, and one of the nave windows has wooden mullions. There is also a curious bracket, which may have been for the statue of a saint, or possibly for a lamp, to cast light on the north side of the church to scare away the evil spirits supposed in Mediæval times to abide there. After spending some time in the church, the party crossed the road to the old manor house, once the home of Thomas Edwards, sheriff of Shropshire in 1622, and of his son, sheriff in 1644. Here they were very kindly welcomed by the mistress of the house, and shown the well-proportioned old rooms, and a curious shaft in the cellar, traditionally associated with Charles II.'s escape from his enemies. Another object of interest was a pillion which had belonged to an ancestress of the family. It is covered with quilted blue cloth, in excellent preservation. Accompanying it was an old leather saddle bag, dating from the time when wheeled vehicles were hardly known away from the main roads. More time could have been spent at Greete, but there was the rest for the horses to think of, so after thanking those who had so kindly put their local knowledge at their service, the members again took their places for the drive to Burford. Here there was no one to show the treasures of the beautiful church, but the members found out for themselves many points of interest, chief among which are the monuments and the curious painted triptych. After the horses had had their rest and feed at Tenbury, the start was made for the return journey to Ludlow. A pleasant break in the nine miles drive took place at Little Hereford, where the party visited the interesting church under the guidance of the vicar. Strictly speaking, this is outside the limits of Shropshire, though it lay more on the route than the churches of Ashford Bowdler and Ashford Carbonel, to which time did not permit of a visit.

Those of the party who had not been obliged to leave Ludlow by the 6·9 train had a pleasant dinner at the Feathers, and reached Shrewsbury at 9 57, after an interesting day in some of the prettiest parts of the beautiful county.

NORFOLK AND NORWICH ARCHÆOLOGICAL SOCIETY.

THE annual excursion of this Society was held on the 9th inst. under very unfavourable conditions as regards the weather, which, threatening all through the day, culminated in a heavy downpour of rain. At 9 A.M. a large party, which received additions later in the day from other districts, entrained for Aylsham. Aylsham Church was the first place visited by the party. A few notes of interest to the visitors were provided by Canon Hoare, who placed the date of the building of the church at about 1380, its founder being the Duke of Lancaster of that day. For some considerable period the courts of the Duchy were held in the parish, the manor extending over a goodly portion of the surrounding district. Externally, one of the leading features of the church is the fine flint-work in the south wall. The interior is made remarkable by reason of the fact that the pillars of the nave on either side and right up to the roof are not perpendicular, as one might have looked for, but have an outward lean of nearly 14 inches. The fact has given rise to some controversy as to whether this is the result of accident or design, the latter being the generally accepted view. In other respects the church is a marvellously complete fabric. It underwent restoration in 1854, and the present roof and the pews, with one exception, are quite modern. There are the remains of a once fine rood-screen, and some idea of its former glory is obtainable from an examination of the northern side, which owes its complete state of preservation to the accident of its being protected in olden times by a pew. The south side is much defaced. Fragments of the screen have also been incorporated in the reredos. The pulpit, Jacobean in character, and the font, which owes its perfect state of preservation to the fact that it was once coated with plaster, are also noteworthy features. Among the bygone worthies associated with the parish and its church, one of the most prominent would seem to have been Humphry Repton, who acquired something more than a local fame as a landscape gardener, the Blickling and Gunton gardens being attributed to his genius. Outside the chancel wall is affixed a tablet to his memory, bearing the following quaint inscription:—

> Not like Egyptian tyrants consecrate
> Unmixed with others shall my dust remain,
> But moldring, melting into earth,
> Mine shall give form and colour to the rose,
> And while its vivid blossoms cheer mankind,
> Its perfumed odours shall ascend to heaven.

Heydon and its hall were the next stopping-places. The village wears an old-time aspect and the peaceful quietude of a real old English country hamlet is apparently the lot of its few inhabitants. The village is an admirable setting to the hall. General Bulwer made a capital host and welcomed all heartily to his fine old home. He had many objects of interest to show or to speak of. The history of the hall itself, begun in 1581 by Henry Dynne and finished three years later, was one topic of interest, and the story of its vicissitudes and fortunes introduced many names of more than local note. A famous ancestor was the Erasmus Earle, the friend of Oliver Cromwell, and by him made serjeant-at-law. Among the treasures to be seen were various warrants for his appointment, over the seal of the Protector and his son Richard. A still more interesting document was the royal pardon of Charles II., a document which we may assume was not too dearly bought at 15,000*l.* (about 40,000*l.* of our own money). A kindly service rendered to a Jacobean lady in trouble was remembered by the gift of the best she could give—a suit worn by the Young Pretender. In later days the general's grandfather and Lord Nelson, once boys together at North Walsham Grammar School, corresponded on one occasion, and the great admiral's reply, framed, is here to be seen. The pictures of Heydon Hall are, many of them, notable. There is a fine collection of interregnum portraits, of especial interest being those of Oliver Cromwell, John Thurloe, Milton, Sir Thomas Fairfax and Andrew Marvel. The ancestral portraits are also remarkable. An amusing story is told of Cromwell's intimacy with the Serjeant Earle above mentioned. When boys together they were one day hard chased in the park by a bull. The lad Oliver speedily climbed a tree; his companion retreated to the stables hard by. To this day a tree bears the name of Cromwell's tree and keeps the tradition alive.

Heydon Church, close by the hall, was interestingly described by the Rev. B. J. Armstrong, who dwelt upon the main points of the building worthy of observation. The Dynne family were closely associated with the history of the church, John of that ilk having erected the screen some time prior to 1493, the year of his death. His name was on the door, but unfortunately both doors no longer exist, and the whole structure has been daubed over with brown paint, which it would be impossible to remove without destroying the original colouring beneath it. The woodwork of it is original up to the spring of the arcading, the top being ordinary deal, which is fast decaying. Alice Dynne, daughter of the aforesaid John, in her will, dated 1521, expressed a wish to be buried "before the image of Our Lady, or else before the image of St. John," the customary figures upon the rood-screen. Of stained glass there was once a profusion in this church, but little of it remains, saving a tiny Annunciation in one of the south chancel windows. In another window is a quaint inscription, showing twelve youths, "young swearers, drunkards, dice-players and other profligate livers, with a representation of hell . . . for to deter youth from such living." North and south of the chancel arch are side chapels, which in ancient days were enclosed by parclose screens, traces of which may still be seen in the capitals and bases of the easternmost pillars. These chapels were used partly for the daily masses and partly as pews. Those familiar with the Paston "Letters" will recollect that one Waryn Harman leaned over the parclose after evensong on the Sunday before St. Edmund's Day, in 1451, where Agnes Ball and Clement Spycer were having a dispute with Agnes Paston about her closing a public footpath. The tomb of Serjeant Earle aforesaid is a memorable one, inasmuch as tradition has it that the immense slab which constitutes it broke down three bridges on its passage from London to Heydon, and also the back of a man who helped to place it in situ. The font has been the subject of learned controversy, some maintaining it to be Norman, others expressing an opinion diametrically opposite. Lastly, the parish has reaped some measure of notoriety by the fact that its church tower is one of only two in the county in which is found growing specimens of the Ceterach officinarum fern (the scaly spleenwort), locally known as the Heydon fern. Happily existing specimens are beyond the reach of would-be possessors of such a rarity.

Saxthorpe Church, dedicated to St. Andrew, and the next stopping-place of the party, was not of very great merit from the archæologist's point of view, and a brief visit sufficed. It also has remains of a rood-screen, but a very inferior specimen. Outside on the nave gable may still be seen the sanctus bell-cote.

The noontide hour having by now been reached, the party, with appetites considerably sharpened by their journey, partook of luncheon in the village, a marquee being erected for the occasion on the Castle inn ground. On the journey being resumed, Mannington Hall, the domain of the Earl of Orford, was reached in half an hour's drive. Lord and Lady Orford were unable to be present on this occasion, in consequence of a family bereavement, but the honours of the house were admirably done by Mr. Thompson. The visitor to Mannington can scarcely conceive a more delightful retreat than this old-time mansion, set amid such picturesque surroundings of park-land and woodland. A wide moat, spanned by a miniature drawbridge, adds to the quaintness of the building. On entering the house one cannot but admire the evidences of good taste and quiet splendour which characterises the various apartments. All the beauty that there is in valuable pictures, rich tapestry and hangings, and luxurious furniture is here acquired by their noble owner. A goodly portion of the afternoon was spent here, and by the kindly forethought of Lord Orford tea was provided for a somewhat numerous party. In an interval a few brief notes about Mannington were read by Mr. R. J. W. Purdy, of Aylsham. The tourist in this part of Norfolk, he observed, cannot fail to notice the numerous shallow valleys with which its surface is furrowed, nearly all of them watered by small rivulets that form the tributaries of its two principal rivers, the Bure and the Wensum. If these valleys be traversed only a short distance most of them will afford a mine of wealth, even to the casual observer, and an inspection of them will throw considerable light on the homes and habits of the former inhabitants of this district. The first thing which strikes one is the number of moated sites that still exist. These are chiefly angular, but sometimes round or oval. They are generally sheltered from the north and east by rising ground and fed by the rivulet or a strong spring near its source, thus possessing the conditions that rendered them so attractive to our ancestors, viz. warmth, shelter, water supply and, thereby, security. It must not be concluded, however, that the buildings, the remains of which are enclosed by these moats, were always of the same date as the excavations around them. It is probable that in many instances Saxons, Danes and Normans respectively placed their residences inside a ready-made defence that existed in Roman times, and afforded protection to their cohorts from the fierce attacks of the Iceni, a tribe so much dreaded by the Roman conquerors of Britain, that we may with some degree of certainty attribute the comparative absence of domestic Roman architecture in Norfolk to the terror inspired by this warlike people. The parish of Mannington has for its eastern boundary one of these valleys. Looking at the present house we see a large archway, now blocked up, that may have been its principal entrance. The original fireplace in the morning-room was probably in the great hall that was open to the top of the second storey, and had its minstrels' gallery and other accessories common to dining-halls in those days. This room is now enriched with fine oak panel brought from Irmingland Hall, the plinths being surmounted with the badge of the Bacons, a boar ermine charged with a crescent. A richly-carved overmantel in the drawing-room came from Thwaite Hall. It was said to be part of the débris of the Duke's palace in Norwich, whose wreck supplied so many houses built about that time with their best oak carving. The ancient fireplaces in the dining-room and the bedroom above it have shields upon them containing the arms of Lummer, Potts, Monwaux, Willoughby, Dodge and Boteler, some of which have been effaced. Leaving the house, and entering the chapel yard on the south-west side of the road, the visitor notices two circular depressions in the ground. These are the result of the phenomenon mentioned in the Philosophical Transactions for January 1718. It is there stated that on July 23, 1717, in the daytime, to the astonishment of those who were present, three oak trees were seen to subside and sink into the earth to the depth of 9 feet 3 inches, water boiling up in the holes around the trunks. In this charming shrubbery, generally known as the sanctuary, are many objects of local interest. Some Druids' stones near the entrance deserve mention. Their polished surface and glaciated scratchings once reeking with the blood of victims offered as human sacrifices upon them, carry us back in imagination to ages long before the Saxon tumulus peeping over the hill behind the hall was raised in honour of the warrior whose ashes may have been contained in one of the urns, the fragments of which, with the ring, beads, buckles, &c., were found two years ago by some workmen carting gravel on the hill close by. The grove beyond marks the site of the house of the de Barninghams, of Barningham Parva, where in 1312 Sir Henry de Seagrave, Sir Hugh Tirrel and twenty-five others, after ill-treating the Lady Petronella le Gros, set fire to the house in five places, by which it may be assumed it was a building of some magnitude. A bank remains which dammed the water to supply the lord's mill. This place must not be confused with the home of the de Berninghams at Barningham Northwold, afterwards the residence of the Palgraves, a wing of which, with about half of the moat, is yet in existence. Here are nine fine priests' coffins, beside them a row of holy water stoups, there the apex of a cross that adorned a fane long since demolished, whilst scattered around are numerous fragments of rich tracery that filled the windows of neighbouring religious houses centuries ago. These, happily, have found a safe asylum at Mannington, and are fitting adjuncts to the remains of the modest little church erected by Aylmer de Valence. This nobleman played an important part in church work, for Corpusty, Saxthorpe, Irmingland, Itteringham and Barningham Parva owe much in their churches to his munificence. He built his castle, called Mekil Hall, in Saxthorpe, near the bridge over the Bure, about a mile east of the church. The site of this castle was afterwards occupied by a Tudor house, which was destroyed by fire in the early part of the present century. He also founded St. Dunstan's Chapel in Saxthorpe. This was in a field still called Chapel Close, approached from the river by a narrow way called Monk's Lane. His tragic end will be remembered by all, as he fell in a tournament, his wife, Mary de Chattelon, being a bride and a widow the same day. In taking leave of this fascinating old English home, observed Mr. Purdy in conclusion, with its highly interesting contents and surroundings, whose walls and battlements are mellowed by the lapse of nearly five centuries, we may congratulate ourselves that it has for many years been in the hands of those who have thoroughly appreciated its antiquity by not allowing it to be contaminated by inharmonious adjuncts, leaving it to feast the eyes of the modern antiquary. Let us hope it will so remain for ages longer, to call forth in the archæologist that reverent admiration which can never be roused by inspecting the sumptuous magnificence of the palace of to-day.

Towards the close of the afternoon the rain which had threatened all day came down in earnest, and the concluding drive to Blickling was accomplished in a perfect deluge, against which umbrellas and mackintoshes made but poor provision. By reason of this the visitors lost much of the pleasure of their visit, for it was an impossibility to see round the lovely gardens, which are one of the chief charms of Blickling. The magnificent interior, however, with its wealth of decoration and its imposing library, compensated in some degree for the loss of any outdoor pleasures, and the Marchioness of Lothian was very cordially thanked for her personal interest in the visit.

UNIVERSITY COLLEGE, LONDON.

THE following students have obtained prizes and certificates in the classes of architecture and construction at this college, under the direction of Professor T. Roger Smith :—

FINE ART. Donaldson Silver Medal. H. E. Seccombe. Prize. J. G. Johnson. Certificates, 3*. W. S. Walker, 4*. J. R. Sykes, 5*. G. O. Howship. *Second Class.* A. C. Russell. *Third Class.* W. A. S. Pettit.—CONSTRUCTION. Donaldson Silver Medal. H. F. Northcote. Prize. G. O. Howship. *Second Class.* J. G. Johnson. *Third Class.* L. C. Lander.—SKETCHES. Prize. Amy K. Walker.——CLASSES MAINTAINED BY THE CARPENTERS' COMPANY :—ARCHITECTURAL DRAWING CLASS. 1st Prize. J. H. Davies. 2nd Prize. W. A. S. Pettit.—STRUCTURAL DRAWING CLASS. 1st Prize. G. H. Wade. 2nd Prize. W. Butcher. *Second Class.* L. H. Lee.—QUANTITY SURVEYING. *Advanced.* Prize. H. C. Garland. *Second Class.* T. H. Smith, G. Waghorn. *Third Class.* J. Coutts. *Elementary.* Prize. E. T. Ferry. *Second Class.* H. E. Goldsmith, S. G. Peartree. *Third Class.* S. C. Barnet, G. J. Sima, G. T. Evans, A. J. Reis, W. F. H. Stevens.

The evening class for instruction in building construction and constructional drawing, till now conducted by Mr. R. Elsey Smith, who has become professor at King's College, will in future be conducted by Mr. A. Buchanan, the well-known instructor in this subject at the Battersea Polytechnic.

TESSERÆ.

Brechin Cathedral.

THE first monastic churches and cathedrals in Scotland were erected on the sites of the religious schools and cells of the Celedes or Culdees, that is, the primitive Christians who having been banished beyond the Roman empire in the persecutions of the early emperors, sought refuge in these mountain wilds, where, on the revered spots already consecrated by the solemn rites of the Druids, they taught the doctrines and morality of the Christian gospel together with the sciences, so called, of that period. Their name is generally supposed to be derived from the fact of their living together in cells. When the Culdees, after a struggle for independence, gave place to the episcopal system, the abbeys and cathedrals at present still partially standing rose upon the ruins of their school establishments, and in the time of David II. a particular diocese with munificent endowments and revenues was conferred upon each of the bishops, who at first were not locally appointed, but exercised their pastoral functions as itinerants. Brechin was the seat first of the Culdees, then of a bishopric of which the revenues were of great amount. On the edge of a deep ravine stands the part of Brechin Cathedral which escaped the demolishing zeal of the Reformers. It is partly formed into a commodious parish church. Close by, and joined by a passage, stands one of the curious round towers, of which, though so common in Ireland, only one other specimen exists in Britain, namely, at Abernethey in the county of Perth. The whole height is 103 feet, that is, 80 feet to the summit of the cylindrical column, and 23 feet from thence to the apex of an octagonal spire. The diameter of the base is 16 feet including the walls, and 12 feet at the top. In the contiguity of position to a church, in form and dimensions, and the appearance of great age, it corresponds to those in Ireland on which so much curious erudition has been expended.

William of Wykeham.

Wykeham was seventy years of age when he commenced the restoration of Winchester Cathedral. He calculated that seven years would complete the undertaking, and hoped to live till the last stone was laid ; he had more than his wish, for it was after ten laborious years that the bishop had at length the satisfaction of seeing the doors thrown open and the wonders he had wrought displayed at large to his people. "There is no fabric of its kind in England," says Lowth, "after those of York and Lincoln, which excels the nave and aisles of the cathedral church of Winchester in greatness, stateliness and majesty. It was but just finished when the bishop died, but he had provided in his will for the entire completion of his design by his executors in case of his death. He allotted 2,500 marks for what then remained to be done, besides 500 marks for the glass windows ; this was about a year and a half before it was finished, by which some sort of estimate may be made of the whole expense."

Il Maurino.

In Algarotti's letters frequent mention of Mauro Antonio Tessi is made, where he has described many of his works at considerable length, and speaks both of them and him in terms that would seem quite exaggerated if they were expressed by a less intelligent critic, or were his praises not confirmed by the opinions of others. The encomium paid to his memory in the inscription on his monument in the church of S. Petronio, Bologna—"Elegantiæ veteris in pingendo ornatu et architectura restitutori"—has not been considered more than is due to one who set an example of more refined and purer taste in architectural design and composition. His productions are highly esteemed, and though his pictures are few, he left a great number of drawings, and also a series of architectural plates engraved by himself. He was born at Montalbano, in the territory of Modena, January 15, 1730. Though in poor circumstances, his parents were so desirous of giving him a good education that they removed for that purpose to Bologna, where he was admitted into the Scuole Pie. Manifesting a great taste for drawing, he was placed under Carlo Morettini, a mere heraldry painter. It is therefore not without reason that Algarotti calls him self-taught, for though he afterwards received some instruction from an engraver named Giovanni Fabbri, it could have contributed but little towards the excellence he displayed in that branch of art which he selected —architectural design and painting. For this he was doubtless most of all indebted, after his own talent, to the instruction and assistance of Algarotti himself, who made him the companion of his journeys to various places and treated him as a son. The attachment was reciprocal, and it was owing to his attentions to his patron during his last illness at Pisa that he fell into ill-health himself, and died two years afterwards at Bologna, July 18, 1766.

GENERAL.

Mr. W. Emerson, on the invitation of the Corporation of Bath, will unveil the tablets marking the houses of the two Woods, the architects to whose skill Bath owes its characteristics, on September 20.

The Bridlington United District School Board have instructed Mr. J. Earnshaw, M.S.A., to prepare designs for central schools to accommodate 1,000 children.

The Munich Artists' Club and the Plastic Art Union of Munich are making arrangements for the eighth of a series of international art exhibitions, to be held at Munich in 1901.

The Gosport Drainage Committee have decided to recommend the Council to adopt Mr. Law's scheme of draining the town. It has been estimated that the cost of the work will amount to 81,000*l.*

The Trustees of the Whitechapel Art Gallery have received a donation of 50 guineas from the Fishmongers' Company ; and the Drapers' Company have also promised 250*l.* conditional upon the balance, about 1,900*l.*, being raised within a reasonable time. This would admit of the gallery being furnished and opened free of debt, which the trustees hope to do in October.

A Memorial Hall is to be added to the Provincial Royal Jubilee Hospital of British Columbia, to commemorate the soldiers from the district who fell in the South African war. Mr. John Teague, of Victoria, is preparing the plans.

Christ's Hospital Site, Newgate Street, E.C. — This historic site, comprising an area of over 5 acres in the City of London, has now been sold. Mr. Sydney Perks, A.R.I.B.A., P.A.S.I., of 5 Crown Court, Cheapside, E.C., is now engaged on behalf of the purchasers in making an accurate survey of the estate.

Subscriptions in aid of the explorations at Knossos in Crete, which are to be resumed next year, will be received by Messrs. Robarts, Lubbock & Co., the bankers of the Cretan Exploration Fund.

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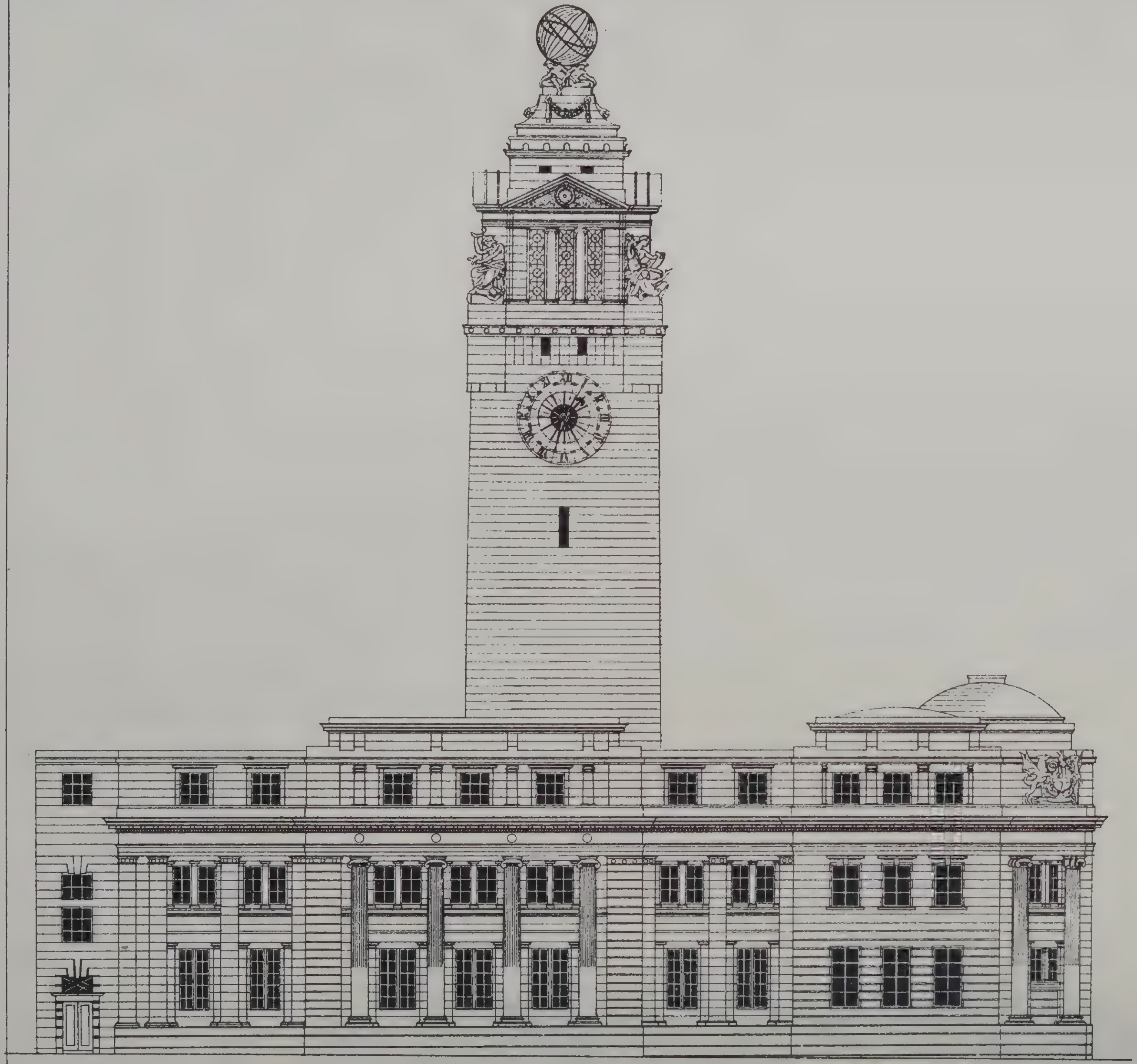

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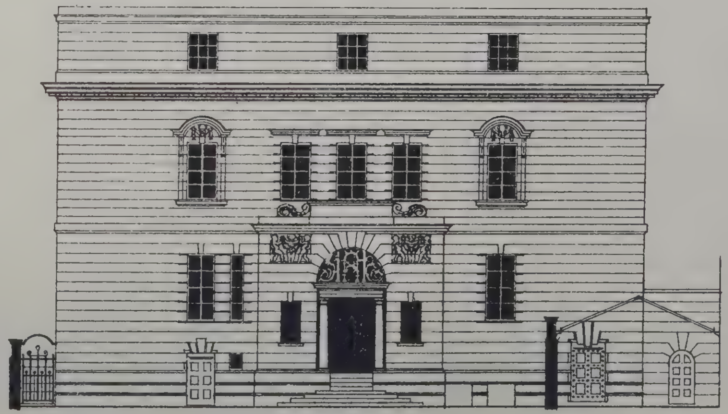

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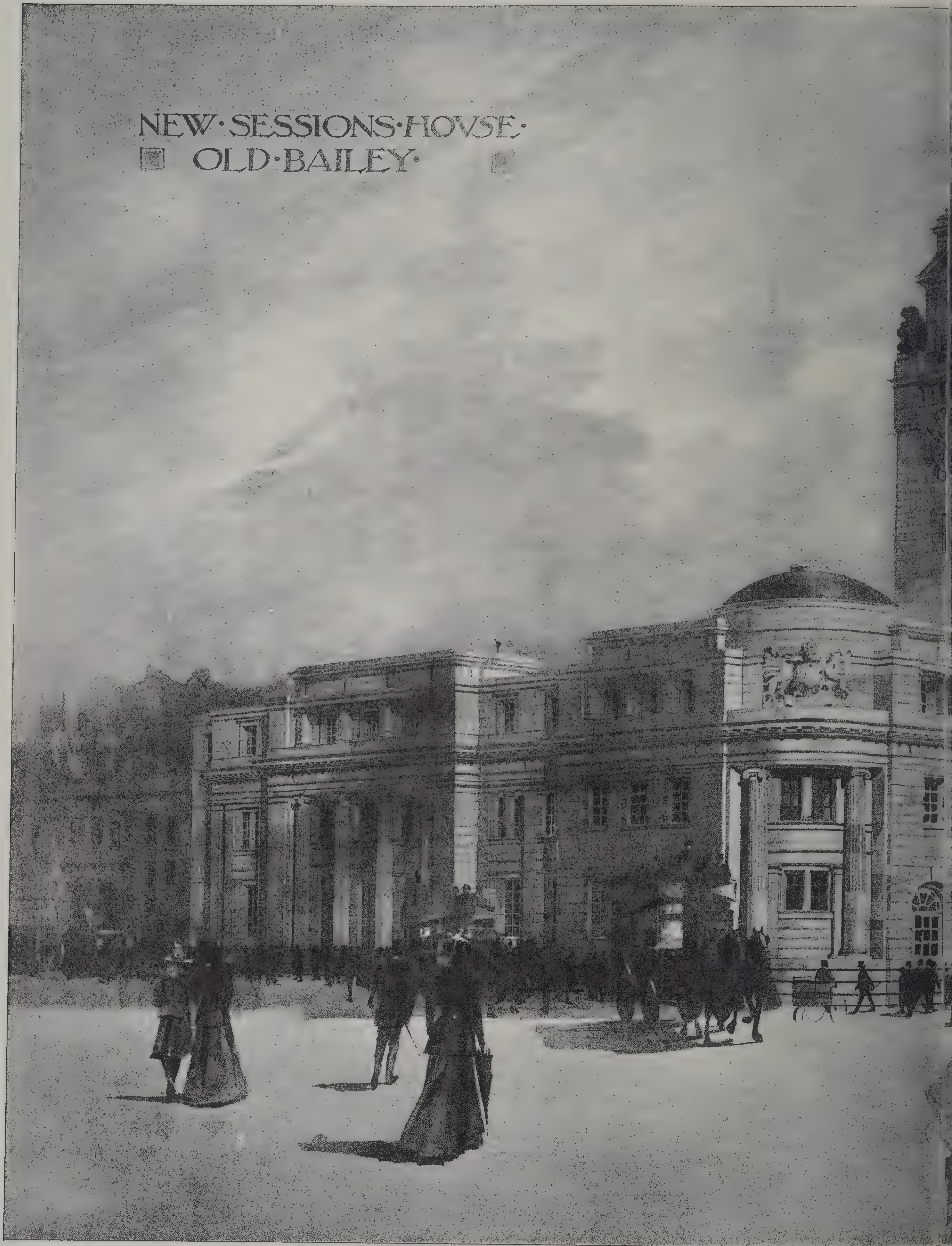

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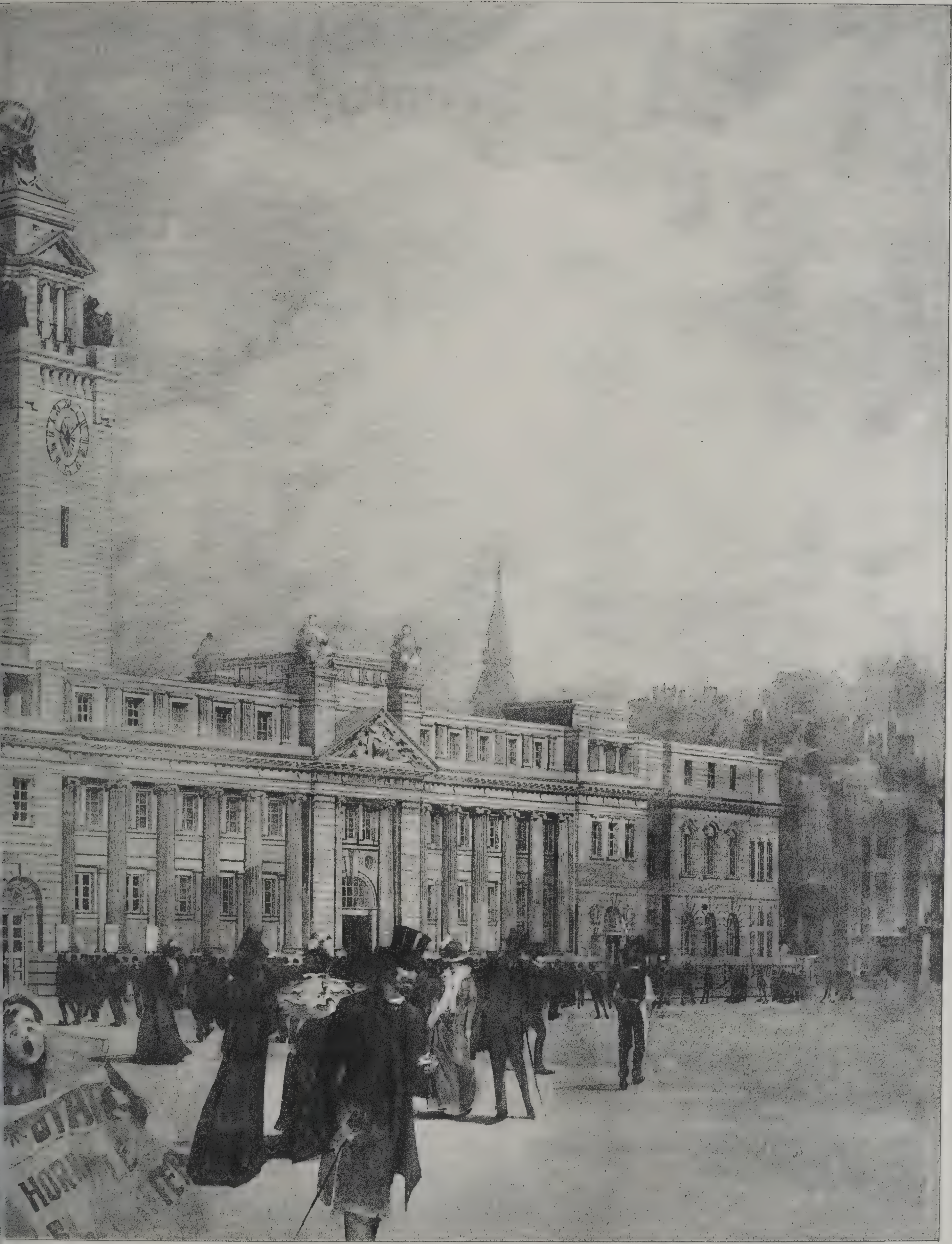

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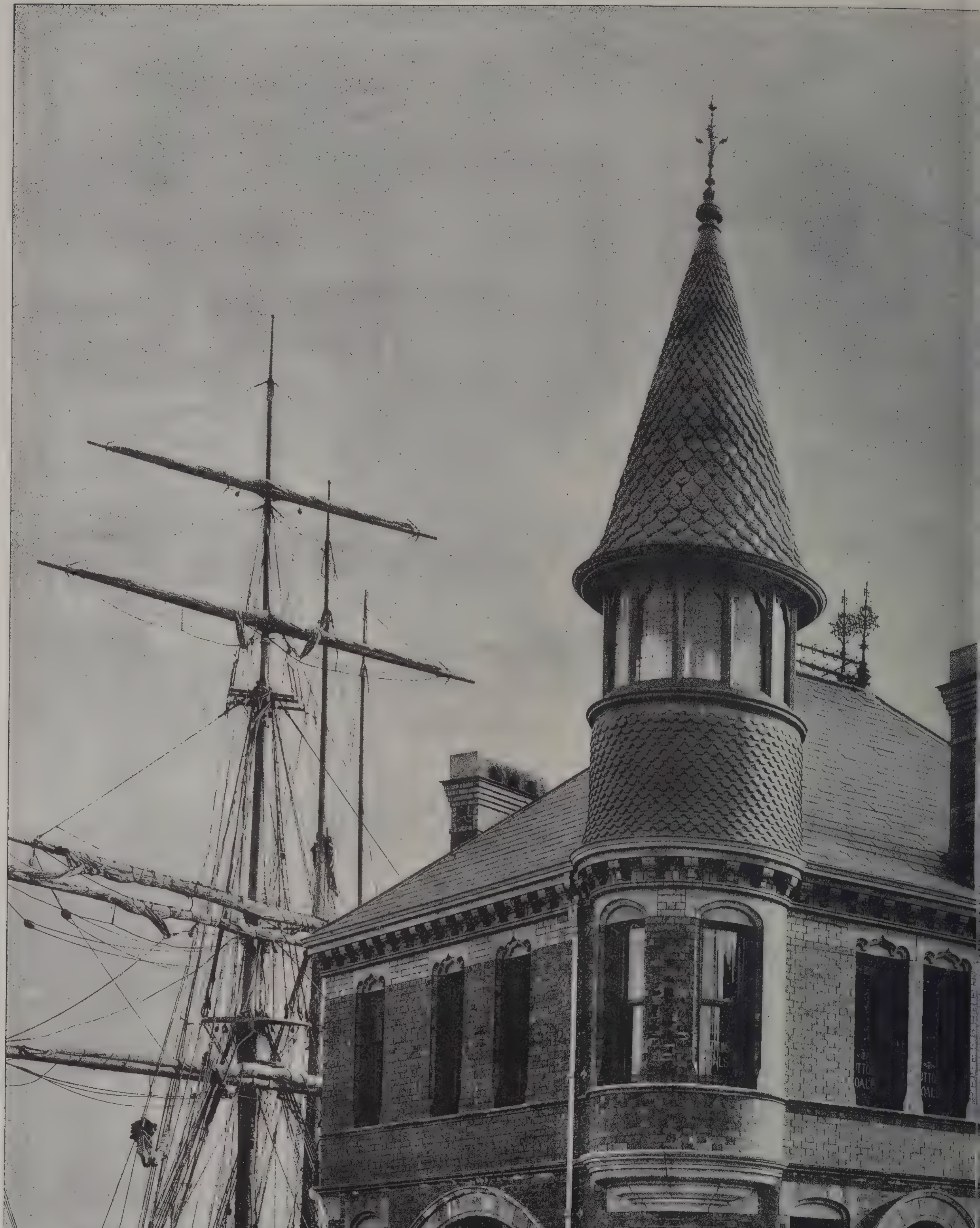

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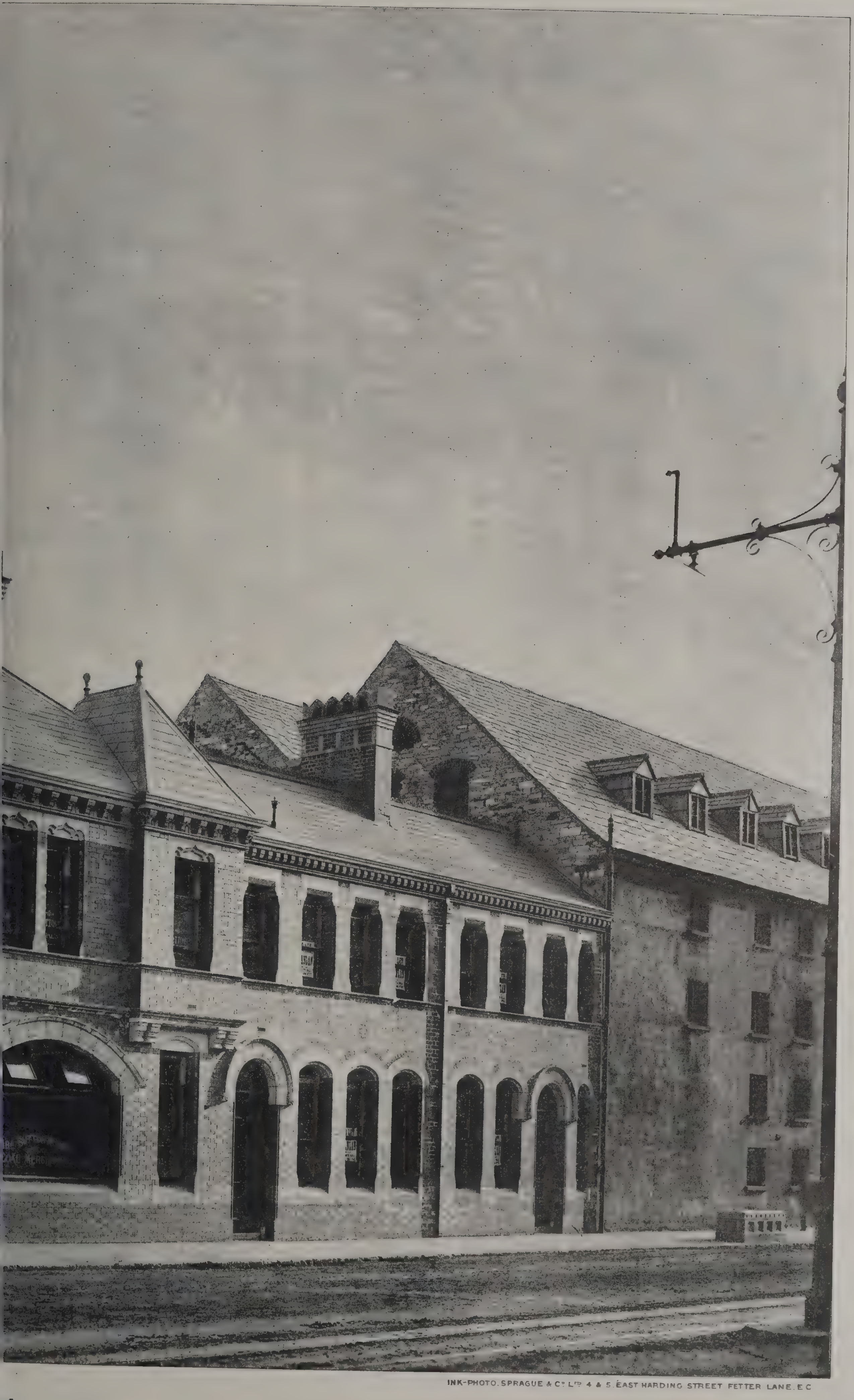

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MALL, CORK.

.B.A., Architect.

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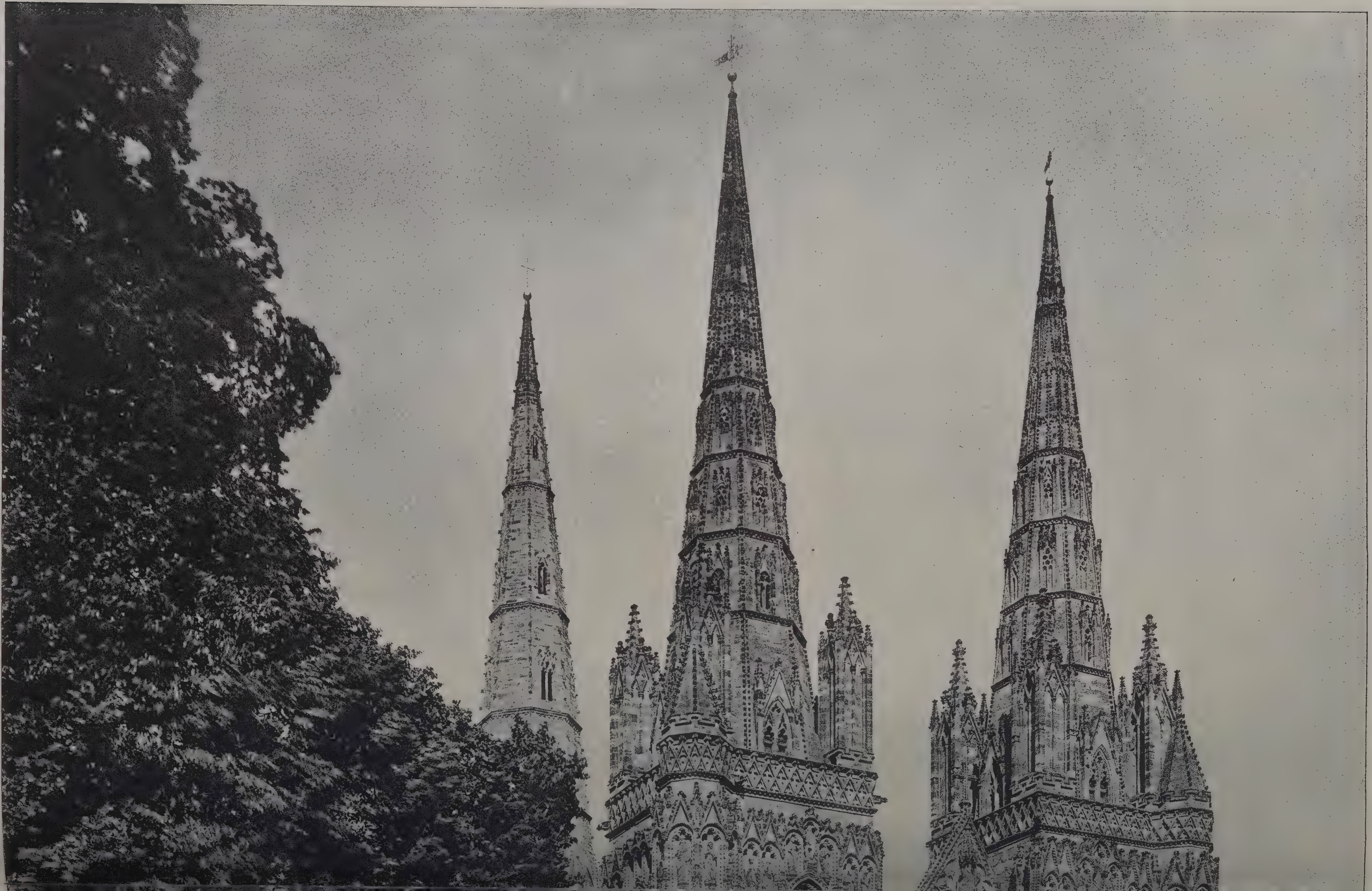

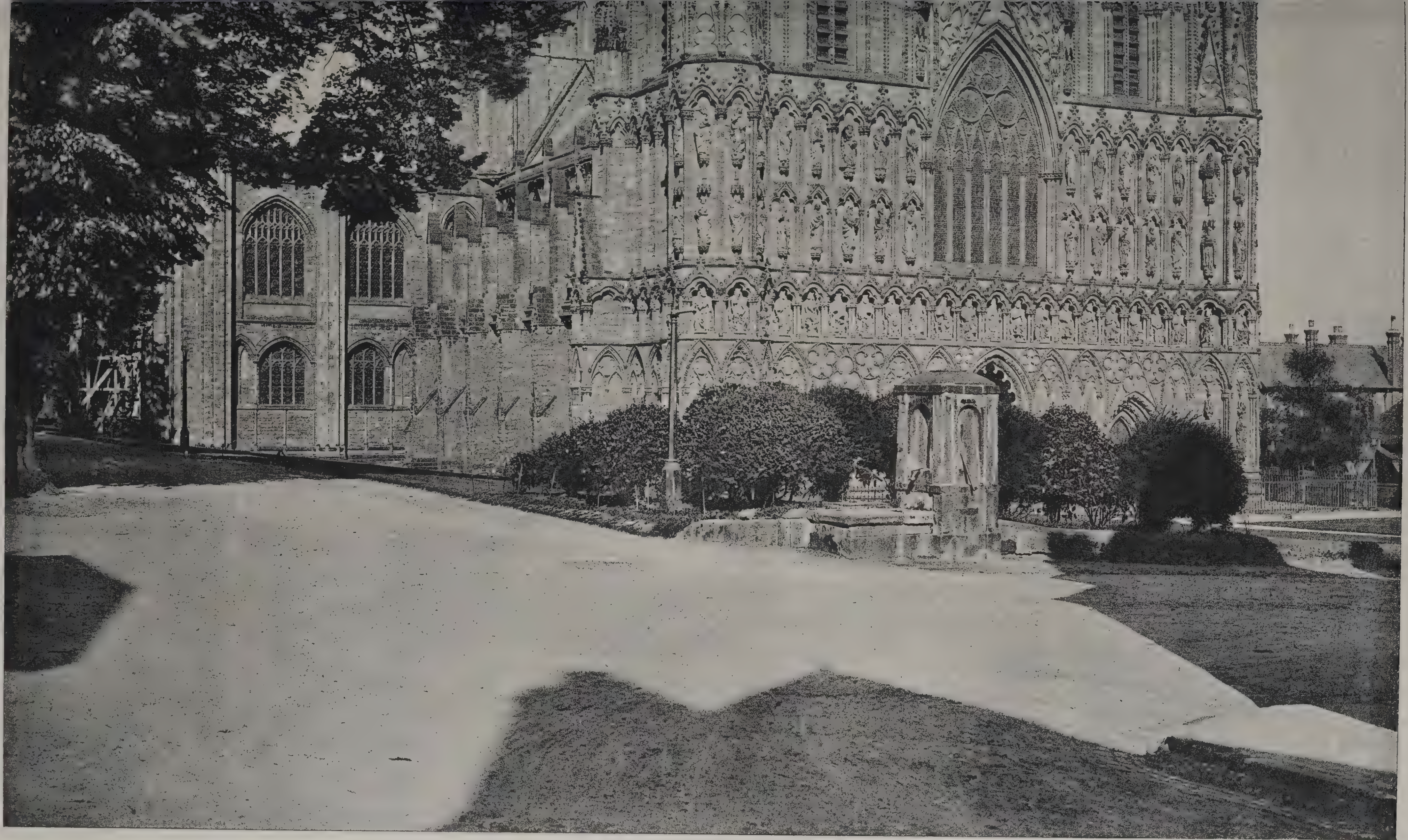

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CATHEDRAL SERIES, No. 291.—LICHFIELD: WEST FRONT, FROM NORTH-WEST.

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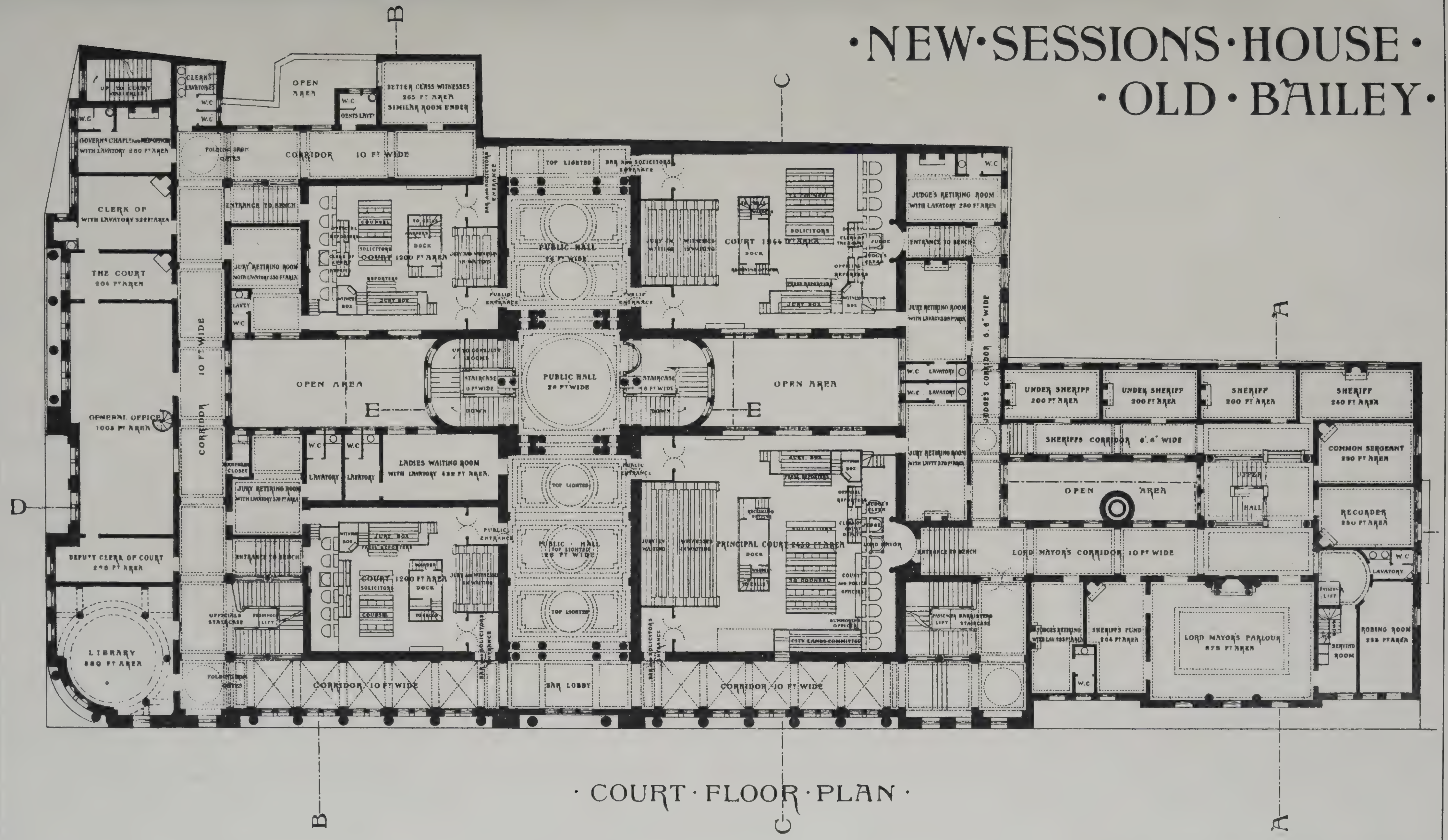

Design for the New Sessions House, Old Bailey.

By H. L. Florence, F.R.I.B.A.

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The Architect.

THE WEEK.

In the section of architecture of the International Exhibition in Paris 18 grands prix were awarded, but among them not one fell to any English exhibitor. As was to be expected, France obtained the majority, having no less than 12. Germany obtained 2, Denmark 1, Hungary 2 and Sweden 1. The 44 gold medals were distributed as follows:—France, 16; Germany, 4; Austria, 5; Denmark, 1; Great Britain, 5; United States, 3; Hungary, 3; Italy, 2; Japan, 1; Monaco, 1; Norway, 1; Holland, 3. The 70 silver medals were thus divided:—France, 25; Germany, 9; Austria, 4; Belgium, 1; Spain, 1; United States, 9; Great Britain, 9; Greece, 2; Hungary, 2; Holland, 4; Portugal, 2; Roumania, 1; San Marino, 1. The English winners of the gold medals are Messrs. J. Belcher, T. E. Collcutt, W. Emerson, E. Lutyens and Aston Webb. The silver medals were obtained by Messrs. Austin & Paley, J. J. Burnet, W. D. Caroë, Clowes, H. Field, W. Leiper, E. J. May, E. W. Mountford and L. Stokes. Bronze medals were given to Messrs. Basil Champneys, W. J. Lanchester and B. Pite. In the section of sculpture, out of 46 grands prix three were awarded to Great Britain, whose representatives were Messrs. Thomas Brock, George Frampton and Hamo Thornycroft. English sculptors gained five out of the 112 gold medals, the successful artists being Charles Allen, Alfred Drury, J. Goscombe, A. Lucchesi and J. M. Swan. Six of the 145 silver medals were obtained by W. Colton, H. Fehr, E. Mullins, H. Pegram, F. W. Pomeroy and A. Hebert. Only three of 147 bronze medals can be credited to Great Britain, the victors being Mrs. Bruce, the Countess Gleichen and Albert Toft.

The Folly Theatre in Brooklyn, New York, is the first that has been constructed according to the new building laws which came into force last December. One of the peculiarities is an open court, 114 feet long and 8 feet wide, by which the theatre is separated from a neighbouring building. There are two exits of a width of 5 feet each to the court from the three floors of the theatre. They lead to iron stairways supported on cantilever wall brackets. On the opposite side of the building there are openings to a mezzanine storey, which is over a café and a dressing-room, from which there are stairs communicating with the street. There are also other communications with the street from all parts of the house. The facilities for leaving the heatre will be evident when it is known that with a frontage ine of 250 feet there are openings which together make 54 feet. The exterior walls are of brick, with terra-cotta ressings. The partitions are of porous terra-cotta blocks r concrete, and all the beams and girders are encased in ollow tiles and plaster. The architects of the buildings re Messrs. Dodge & Morrison, of New York.

The opportunity of the present period has been seized make some atonement to French artists whose promotion in the Legion of Honour has been neglected for any years. Not to be a chevalier implies some deficiency a Frenchman, for there is no great difficulty in gaining mission to the order, and it cannot be denied that mong the outsiders are able men who are excluded cause they are too independent. From the same cause any remain in the lowest grade. One of the victims is Alfred Nicolas Normand, who by Englishmen is eemed as among the foremost representatives of architecture in France. He won the Prix de Rome in 1846, and he received medals at the international exhibitions of 1855, 1878 and 1889. He entered the Legion of Honour in 1860, and for forty years he has not advanced beyond the grade of chevalier. Probably one of the reasons which prevented his promotion was his designing the Pompeian palace for Prince Napoleon. There never was a more successful attempt to revive Roman architecture, and in spite of the dislike for its owner, it could not fail to be appreciated as an architectural triumph. M. Normand has been the principal architect to the Minister of the Interior, he is president of the Académie des Beaux-Arts, and this year was selected as the representative of the combined academies, or the Institut de France. Thus he has been superior in academic and professional rank to many Frenchmen who enjoy much higher distinctions in the Legion of Honour. Fortunately the injustice has had an end. M. Normand can be congratulated on his attaining his promotion, for he is now one of the Legion's most distinguished officers. Another long course of neglect has been remedied in the person of M. Fantin-Latour. His works are considered to be so necessary an element in English exhibitions, it is difficult to realise he is not a naturalised Englishman. His portraits and flower pieces are always admired, but probably his regard for this country has not served him, for he has remained a Chevalier since 1879.

The practice of tendering is not confined to builders and contractors. The latest example of the application relates to the valuation of collieries. Work of that kind might be supposed to belong to specialists, who would have definite fees for their services, which allowed very slight variations. A case has occurred in Wales where the guardians sought for a new valuation of the collieries in their union, and they applied for tenders. They received the following:—Messrs. Eves & Sons, 500*l.* and expenses; Messrs. Graham, Hitchcox & Co., Newport, 1,000*l.*; Mr. J. F. Hedley, Sunderland, 1,200*l.*; Messrs. Hedley, Mason & Hedley, Birmingham, 1,260*l.*; Messrs. Castle & Sons, 1,390*l.*; Mr. J. Lamb, 2,000*l.* It was decided to accept the lowest tender, which, it will be observed, was in amount only one-fourth of another tender. After this example it can no longer be said that discrepancies between tenders are solely to be found in builder's work.

Although the late Thomas Faed did not exhibit much of late years, his excellence as a painter has not passed from the public memory. The subjects he selected and the style he employed could not make him a model for modern students, but as a narrative painter he was to be commended. He never offended against the proprieties even venially, and the prints from his pictures could be hung in nurseries or ladies' schools without any misgiving about their appositeness. As a painter he was not equal to his elder brother John, but he was more fortunate in exciting the public interest and gained success. It might be said Thomas Faed gained his position through an accident. When in 1855 he sent his *Mitherless Bairn*, a picture inspired by the verses of William Thom, the Inverury weaver, to the Academy it was skied. The subject was pathetic, and the public regarded the picture as if it were another example of a friendless thing. There was an outcry, and the painter became the martyr of the season. In the succeeding years the hanging committee were more careful with Thomas Faed's contributions, the visitors continued their sympathy towards the artist and his works, and in 1859 he was able to gain admission as an Associate. Five years afterwards he was elected an Academician. Under other conditions of training Thomas Faed would have rivalled Josef Israels. Unfortunately his scheme of colour was rarely in keeping with the pathos of his subjects. He saw the Scottish peasants wearing clothes of varied hues, and he concluded it was allowable to present in a picture whatever he could see in a humble cottage. The effect of his tenderness and affection is therefore diminished by the glaring colours, and his pictures appear like a story told in two languages which are without any affinity. Thomas Faed was born in 1826, in Gatehouse of Fleet. He studied in the Trustees Art School, Edinburgh, and when he was twenty-three he was elected an Associate of the Royal Scottish Academy. After he came to England, the print publishers realised the popular character of his pictures, and large plates were produced from them. By that means his reputation was extended, and for nearly forty years his name was familiar in many households, not only in Great Britain, but wherever throughout the colonies Scotsmen find homes.

£141,641,383.

THE rebuke which Lord Wolseley was compelled to inflict on the troops at Aldershot on account of their inefficiency for war has by this time inspired many strategists, adventurers and publicists abroad to gloat over the unpreparedness of Great Britain to resist an invasion. There are always foreign Bobadils who are able to demonstrate how easy it would be for a few courageous men to annihilate all the forces which could be mustered to oppose them. According to them Britain is now not more able to resist an attack than it was in the days of Cæsar or William of Normandy. And what a prize awaits the conquerors. Blücher could only sigh when he saw the panorama of London outspread beneath him, and thought what a field for plunder it presented if statecraft had not protected it. But since the days of "Marshal Vorwarts" the city has become a more tempting prize for a warrior, and there are now in the provinces towns which contain riches enough to gratify as large an army as Blücher ever commanded.

By one of those mysterious coincidences which hardly can be taken as accidental, the revelation of the weakness of the military system of this country has been followed by an official statement of the value of England and Wales which is enough to excite the greed of all foreigners, who are convinced that rightly conducted a war of invasion can be made a paying game. By order of the House of Lords a return has been prepared which shows the estimated rental and rateable value of the lands, buildings, railways and other kinds of property of which a valuation has to be made for the purposes of taxation. Figures are sometimes, if not always, more eloquent than words, and no volume by a critic from abroad can afford stronger testimony than the columns of the return of the property which, if not properly defended, awaits a successful invader, if it were only as a subject for tribute, or a security for a levy of some billions in gold.

Apart from the demonstration of the value of England and Wales for the instruction of strangers who are envious of our prosperity, the return has a peculiar interest for the majority of the readers who are likely to consider this article. For we learn on authority which is unquestionable, that of the England which is rateable and rentable, the greater part is the creation of the builder. For what are the facts? If we take the gross estimated rentals of England and Wales as furnished by assessment committees, clerks to guardians and other officials, we discover that in the year 1899 the percentage arising from land amounted to 16·4, from railways it was 9·5 and from other kinds of rateable property it was 7·1, but for buildings (including under that head houses, shops, warehouses, mills, factories, docks, wharves, &c.) the percentage was no less than 67·0. The various proportions can be likewise expressed in a form which perhaps will be more expressive. The gross estimated annual rental of all kinds of rateable property in England and Wales is returned at 211,458,966*l* Out of that enormous sum no less than 141,641,383*l*. belongs to buildings. The agricultural and other lands can only be put down for 34,675,567*l*., railways for 20,113,849*l*., and the remaining rateable property for 15,028,167*l*. No less remarkable is the growing importance of buildings as an element of the national wealth. Five years ago they represented a percentage of 64·7 of the gross estimated rental, while in 1899, as we have shown, the percentage was 67·0. Land which in 1894 had a percentage of 19·3, in 1899 had fallen to 16·4, or, in other words, the depreciation of land is almost compensated by the increase of buildings and their enhanced value.

People should ponder over the foregoing facts, for the figures are by themselves enough to demonstrate that in spite of all that can be said by cynics and others who are free from the responsibilities of property, there are no men who do so much for the creation of enduring wealth as those who are engaged in the erection of buildings. Railways, land cultivation and other industries are no doubt most useful, especially as auxiliaries to building, but there is no escape from the conclusion that two-thirds of the property which is worth assessment is a creation of builders (in a generic sense), and that the rest, when combined, can only contribute one-third. Under such conditions it is excusable if architects and builders, and those who co-operate with them, should occasionally display a little arrogance, especially when they reflect on the part they play in enriching the country.

It may be considered by some critics that the statistics relate only to a period of phenomenal success like the present. It will be found, however, the growth of building is not spasmodic, but has been in progress for several years in this country. This can be more readily ascertained from the returns of rateable value. Everyone knows that the amounts so described are generally less than the estimated rental, although the difference is not universally uniform. But for statistical inquiries one will serve as well as the other, so long as there is no confounding of the figures. Now the rateable value of the buildings in England and Wales was last year 116,435,938*l*., or 66·3 of the total amount, which is almost identical with the 67·0 which is the percentage of buildings to estimated rental. In 1894 the rateable value of buildings was found to be 102,719,541*l*., or 63·7 of the total rateable value. Now in 1870 the rateable value of buildings was only 55,157,300*l*., or 52·6 of the rateable value. In other words, during the past thirty years the value of buildings has increased by 61,278,638*l*., and the proportion to the total rateable value of England and Wales has become 66·3 instead of 52·6. In this we have evidence of steady growth, corresponding with the enlightenment of the public, which enables them to understand that expending money on building is a public duty.

Here we may remark that by the official statistics we see nothing to indicate any overbuilding in London or the provinces. It will need a long time before that consummation is reached. Progress is associated with building. As industries expand suitable manufactories are needed; a more rational idea is accepted of the quality of dwellings, and as the connection between the character of a town and its municipal offices is realised there must be a substitution of new for old buildings. There is no use in concealing the fact that countless buildings exist in England which are not creditable to us, and the sooner they are demolished the better it will be for the country. It needs, however, resolution for the task. One instance will be suggestive. Dudley is a thriving town owing to the mines and ironworks. But it stands almost alone among Staffordshire towns in showing no advance in the value of its buildings. In 1894 the rateable value of them was 269,369*l*., while in 1899 it was only 262,730*l*. The decrease is owing to the number of houses which were condemned and taken down for sanitary improvements, while others were rendered unfit for habitation by mining operations.

In going over the items of the return the important fact must be remembered that sanitary improvement entails destruction of house property in most cities and towns, and consequently the outlay on new buildings will be diminished by the costs which are necessary in consequence of the removal of others which, if dangerous, at least possessed a rateable value. Between 1894 and 1899 Birmingham increased in value from 1,151,326*l*. to 1,224,102*l*., and Manchester from 1,338 394*l*. to 1,369,699*l*. In both cases the value of the new buildings would appear to be under-estimated. The rateable value of buildings in Liverpool has fallen in the same period from 1,704,108*l*. to 1,672,042*l*., from which it might be inferred that building operations have ceased in the city. Demolitions may be the true cause of the difference, and many more operations of that kind are demanded. Bristol does not suggest to a visitor the carrying out of building schemes on a grand scale, but between 1874 and 1899 the value increased from 373,553*l*. to 1,344,949*l*.; a part of the outlay, we suppose, arose from dock works.

It is remarkable that the rateable value of the buildings in the City of London rises to 4,302,043*l*., which is a larger amount than the combined values of Liverpool, Manchester and Birmingham. Some of the metropolitan divisions are also more valuable than any one of these provincial cities. The rateable value of the buildings of St. George, Hanover Square, is returned at 2,769,267*l*.; Kensington amounts to 1,961,735*l*., Wandsworth and Clapham to 1,956,355*l*., while Islington is valued at 1,678,733*l*., Lambeth at 1,562,519*l*., Marylebone at 1,539,271*l*., St. Pancras at 1,378,321*l*., Strand 1,068,118*l*., Paddington 1,209,531*l*. Camberwell, Hackney, Holborn, St. Saviour, have also houses which exceed a million in value, and Westminster nearly approaches that sum. Taking London as a whole, the rateable value in 1899 was 33,739,860*l.*, and the gross estimated rental 40,552,155*l.* As the corresponding figures for the rest of England and Wales are 82,696,078*l.* and 101,089,228*l.*, the importance of London as a collection of house property becomes manifest. In 1870 the rateable value of the Metropolis was 17,108,736*l.*, and in 1894 it was 30,913,022*l.* It would be interesting to discover how many existing cities if valued by like rules would approach the sums mentioned, or, in other words, would become so tempting a prize for an invader. The security of London should therefore be accepted as the most important point in any organised system of national defence, and no money should be spared to attain that end.

DÆDALOS.

THE remarkable account which Mr. Arthur J. Evans gave of the excavations in the Palace of Knossos, and which we reproduced last week, testifies to the skill with which the site was selected, and is enough to demonstrate the advantages of supporting the Cretan Exploration Fund. We have allowed Frenchmen, Germans and Americans to become identified with modern exploration as if Classic archæology was of no account in Great Britain, and where so much success is likely to be obtainable the opportunity should not be neglected. Crete, it is unnecessary to say, enjoyed celebrity from the earliest times recorded in history. Minos, who was the king, attained so high a reputation as a law-giver, he was supposed to be selected for the judgment-seat in Hades. The Greeks credited him with the reputation of being the first who reduced laws and customs into a system. He was so renowned and so unlike other rulers, he was described as a son of Zeus, whose inspiration for the laws which he enacted came from Olympus. In later times it has been supposed that no mortal was capable of doing all that is ascribed to Minos, and he was therefore treated as a myth. There is little doubt there was at least one wise king of the name who lived at Knossos, and from his palace were issued the laws which were borrowed by various Grecian states.

It may be assumed from what is said that Minos, who was a Dorian, grew up under the reign of laws which were over-rigorous, and established himself in Crete, where he issued edicts which were better adapted to promote progress, and consequently his adopted country became the most civilised part of Europe. It is remarkable that the peculiar success of Crete did not continue, and therefore may be ascribed to some remarkable but temporary cause. It is known that the dynasty of Minos was expelled, and the influence of his ethics must have waned, for the thievery and lying of the people were so generally known that "Cretizare cum Cretensibus" became proverbial.

Great kings have generally been able to obtain the services of the ablest men, and from what is recorded it is evident that Minos (it is uncertain whether he was the first or second of the name) attracted a great artist to Crete, who has been named Dædalos. If possible, the artist is a more mythic being than the monarch. When we learn that he invented the saw, the level, the compass and other tools and instruments employed in the arts, we can recognise in him a pioneer of civilisation, for, as Carlyle says, the true epic should chant "tools and the man," rather than arms and the man. But when we know on authority of similar value that he made wings for his son Icarus, which were more successful than any modern flying apparatus, then the man's power becomes incredible. According to the legend, Dædalos was a grandson of Erechtheus, king of Athens, a genealogy which may have been prepared simply to bring renown on the Attic capital, which was also the capital of the arts. The legend relates that Dædalos killed his nephew and was obliged to take refuge in Crete, where he was distinguished as an architect, a sculptor and a mechanician. But, like many later artists, he was unable to control the violence of his temper. He committed another capital offence in Crete and was, it is said, imprisoned in the Labyrinth which he had designed to contain the Minotaur, from whence he was able to escape with his son by means of the pinions he was able to devise. He next fled to Inychus, in Sicily. Minos demanded the artist, but the Sicilians refused to surrender him, and a war followed. If the tradition could be accepted it would follow that Dædalos introduced the arts into Italy, and on that account also merits remembrance.

When Pausanias wrote his description of the art treasures of Greece there existed several works which were attributed to Dædalos. Among them were a chair or throne in Athens, a nude Hercules in Corinth, and another of the demi-god in Thebes. In Olynthia, in Crete, there was a statue of Britomartis, and in Knossos a figure of Athene. The city also claimed to possess the group of dancers which the artist had executed for Ariadne, and which was described by Homer in immortal verse.

The last is described as a work in marble, but as Dædalos is supposed to have generally employed wood alone, we may assume it was not more than a copy which had been substituted for the original when the latter was decayed. There used to be fêtes at Platea in honour of Dædalos, and on those occasions, along with some examples of his sculpture in wood, figures in terra-cotta or clay were also carried in procession, but whether they were original works or copies it is impossible to ascertain. It is worth noting that Pausanias considered that statues of wood were carved in Greece long before the appearance of Dædalos. He said they were called *dædala*, and consequently, instead of deriving their name from the sculptor, he produced so many of them as to become identified with that variety of art and the title was given to him. *Dædalein* signified to work with delicacy. Homer often introduces the word *polydædalos* to express elaborate finish. Language therefore helps to obscure the mystery.

The great improvement which Dædalos accomplished in sculpture may now appear to be trifling, but in the early days of the evolution of the arts trifling changes are like small seeds which become great trees. In the simple times when a stone or the trunk of a tree could be accepted as an emblem of a god or goddess, it was not to be expected the limbs would be represented with fidelity. Dædalos is supposed to have startled his contemporaries by demonstrating the possibility of suggesting, by the removal of some of the wood from the block, that the figure would become representative of a being with two legs, but such was the power of tradition and association, the critics of a later age, when sculpture had made much progress, believed there was an expression of grandeur over those venerable figures which was not surpassed by any of the contemporary sculptors. Dædalos was also supposed to have been the first who endeavoured to represent open eyes, but according to Winckelmann the passage which records the innovation should be taken in a contrary sense, for it was a merit of the artist to have shown the eyes as closed. From the uncertainty which exists about his improvements, we may suppose that Dædalos stands not always for an individual sculptor, but for those of a whole era. The Greeks could not believe in effects which were produced during a long period by invisible causes. They wished to suggest the belief that some great man, partly human and partly divine, appeared from time to time and accomplished works which, to ordinary mortals, would be incredible from their number. Dædalos to them was one of those heroes, and the wonder is they allowed any limitation to the extent of his power. Instead of being amazed at the quantity of sculpture which was credited to him, we should admire the good sense which kept the Greeks from attributing to so early an artist the improvements in the art which were produced in a later period.

It would, however, be an error to suppose there never was a Dædalos in Crete. Mr. Evans, with the revelations of ancient Knossos before him, speaks with respect of the old traditions which "consistently pointed to Crete, the seat of Minos's sea empire and of the famed works of Dædalos, as the real cradle of Hellenic civilisation—the home of its earliest school of art and of the system of law from which all later codes descended." Whether any of the works of Dædalos are to be found beneath the area which has been selected for excavation has yet to be ascertained. Mr. Evans is not afraid to say that the immense palace on the hill of Kephala, with its long corridors and tortuous passages, must almost certainly be identified with the Labyrinth of which Dædalos is supposed to have been the architect. The decorations on the walls which Mr. Evans describes may belong to a later period, but the building was not unlikely to have been constructed long before. The Court ladies who are represented in the pictures, we are told, are engaged in animated conversation, but as yet we have no account of any one which suggests the admiration for Dædalos by Pasiphæ and other ladies of Crete, which was a legend in classic times, and was made the subject for reliefs and other representations by artists. The sculpture which has been found is much more realistic than could be anticipated from reading the description of the work of Dædalos by Pausanias and Diodorus. It is therefore not impossible after all that Dædalos was exceptionally gifted, and instead of following the regular line traced out by modern evolutionists, anticipated a later time, although the progress he initiated in Crete was arrested by the Dorians and other invaders. A personal problem is always one of the most interesting in archæology, and it is to be hoped means will be forthcoming to enable the English explorers to establish the character of Dædalos as an artist, and consequently to throw light on one of the most obscure chapters in the history of art.

PRINCIPLES OF CONSTRUCTION FOR ARCHITECTURAL STUDENTS.

By E. Wyndham Tarn, M.A.

(*Continued from last week.*)

VIII. *Resistance to Crushing and Stretching.*

CRUSHING stress is that force which columns, struts, shores, &c., have to sustain, and the ultimate crushing strength of any material is that compressive weight which will reduce it to powder, or, at all events, render it useless as a building material. The resistance offered by a pillar to a compressive force depends, however, very much upon the proportion which its length bears to its diameter, and it is only when the length is less than ten diameters that its full crushing strength alone can be taken into consideration. This strength is found by experiment for different materials, and varies greatly according to the cohesiveness of the particles of which they are composed. Thus, for example, in stone it ranges from ¾ ton per square inch in Bath stone to 5 tons per inch in granite; in timber, from 2 tons in spruce fir to about 3½ tons in oak; in iron, from 16 tons in wrought-iron to 36 tons or more in cast-iron, and 70 tons in steel. The safe load, however, as before stated, varies from one-third to one-eighth of the crushing weight.

When the length of a pillar or strut exceeds 10 diameters, the load which it has to sustain will tend to break it by bending as well as by crushing. Thus, supposing the crushing strength of cast-iron short pillars to be 36 tons per square inch of section, that of pillars 15 diameters in length will be only 23 tons; of those 20 diameters long it will be 18 tons; of pillars 25 diameters it will be 14 tons, and of those which are 30 or more diameters in length it will not exceed 11 tons per square inch of cross section. If the length is much greater than 30 diameters the pillar will break by bending before the resistance to crushing can come into play, the breaking strength of a cast-iron pillar whose length is 40 diameters being only 7 tons per square inch.

When, however, cast-iron is used for pillars it is usual to make them hollow, since by so doing we obtain a much greater resistance for the same amount of material than is the case with solid pillars. Thus, we find that a long hollow pillar 5 inches in diameter with ¾ inch of metal is more than twice as strong as a solid one 3½ inches in diameter, and containing the same quantity of metal. The strength of a hollow pillar is, in fact, the difference between the strength of a solid one having the same external diameter, and that of a solid one having for its diameter the internal diameter of the hollow pillar. For example, a solid pillar 15 feet long and 6 inches diameter has a breaking strength of 311 tons, while that of one 4½ inches diameter and the same length has 111 tons for its breaking strength; then a hollow pillar 6 inches external diameter and ¾ inch thick will have a breaking strength of 311 less 111, or 200 tons.

Steel columns, which are now extensively employed, are generally built up of channel-shaped pieces rolled to the required length, and bolted together so as to form a circular or polygonal hollow column; the strength of these is about twice as great as that of hollow cast-iron columns of the same size. The strength of solid steel columns is proportional to the fourth power of the diameter directly, and inversely as the square of the length. That of a hollow steel pillar may be calculated by deducting the fourth power of the internal diameter in inches from the fourth power of the external, dividing their difference by the square of the length in feet, and multiplying the quotient by 100. This gives the breaking strength in tons, one-third of which can be sustained by the pillar in safety.

For example, let the external and internal diameters be 7 and 6 inches, then the fourth powers of these are 2,401 and 1,296, and their difference is 1,105. Let the length be 15 feet, the square of which is 225; then 1,105 divided by 225 is 4·9, which multiplied by 100 gives 490 tons for the breaking strength of the pillar, which is about two and a half times as much as a cast-iron one. This rule applies only to long pillars, as in shorter ones the resistance is greater, as mentioned before. In the above example the pillar will bear with safety a load of 163 tons.

Resistance to stretching comes into force when a pulling force acts in the direction of the length of a rod or beam and tends to produce elongation; the body is then said to undergo tensile stress, the ultimate resistance to which is equal to that force which will just suffice to tear the material asunder, and thus render it useless for constructional purposes.

This force varies in wood from 1¾ tons per square inch of section for spruce fir to 3¾ tons for oak. In cast-iron it is about 6 tons per square inch, in wrought-iron from 21 to 25 tons, and in steel it is as high as 60 tons.

The permanent safe load in material subjected to a tensile stress may be taken as one-fourth of the ultimate resistance in iron and steel, and one-sixth of it in timber. To find the tensile strength of a body of any sectional area, multiply the number of square inches in the section by the amount given above for 1 square inch. Thus, a bar of wrought-iron 3 inches square has a sectional area of 9 square inches, so that its ultimate resistance will be 9 times 25, or 225 tons, and the safe load applied as a stretching force will be 56 tons.

(*To be continued.*)

ROOD-SCREENS IN CHURCHES.

AN application was recently made to the Chancellor of the Diocese of London for a faculty which would allow of the erection of a screen in the church of St. Anselm, Pinner. In connection with the screen was a representation of the Crucifixion, with figures of the Blessed Virgin and St. John. The expense of the work, which amounted to 450*l.*, was borne by one of the parishioners, and the worshippers in the church were unanimously in favour of the proposed work. After hearing the arguments of counsel and the evidence of witnesses, Dr. Tristram delivered the following judgment:—This is an application to the court to decree a faculty authorising a chancel screen to be set up in the chapel of St. Anselm, within the parish of Pinner, with three carved figures over the centre of the arch of the screen. The central figure represents our Saviour nailed to the Cross, with two side ones—those of the Virgin Mary and St. John. The court entertains no objection to granting a faculty for the erection of the chancel screen without the figures, but it must decline to sanction the erection of figures on the screen, on the grounds stated by Lord Penzance in the Arches in the case of Clifton *v.* Ridsdale, which were concurred in on appeal by the judicial committee of Her Majesty's Privy Council. In that case a faculty had been granted in the Commissary Court of Canterbury for the erection of a chancel screen without any mention that there was to be surmounted on it a crucifix. The actual screen as erected is described by Lord Penzance as "one of open ironwork some 9 feet high, stretching across the church at the entrance to the chancel and surmounted by a crucifix or figure of our Saviour on the cross in full relief and about 18 inches long, the sculptured image of Our Lord facing the congregation." There was a row of candles on the top of the screen, which when lighted, illuminated the crucifix. The question for th consideration of the court was whether this crucifix coul be erected as a mere architectural decoration, or when s placed and lighted with candles, when not wanted fo the purpose of light, was in danger of being an object o superstitious reverence. "The best forecast of the future, his lordship proceeded, "in most cases, but especially in those wherein the weaknesses and failings of mankind are concerned, is to be obtained from the experience of the past," and after referring to historical documents as producing unquestionable evidence that the rood in some form or other was in universal existence in English churches before the Reformation and that during the reign of Queen Elizabeth these roods and rood-lofts were destroyed far and wide as monuments of idolatry and superstition, proceeded :—"From all this it is plain that the crucifix formed an ordinary feature in the parish church before the Reformation and it cannot be doubted that it did so, not as a mere architectural ornament, but as an object of reverence and adoration. If any proof was required of this proposition it may be found in the fact that the worship of it was enjoined in the Sarum Use, the missal most largely accepted and used in England before the Reformation. Such is most briefly the part played by the 'rood' or crucifix in English churches in the past. If set up again in them now, what part is it likely to play in the future? It is no doubt easy to say what proof is there of danger of idolatry now? What facts point to a probability of abuse? But when the court is dealing with a well-known sacred object—as enjoined and put up by authority in all the churches of England before the Reformation in a particular part of the church and for the particular purpose of 'adoration,' when the court finds that the same object both in the church and out of it is still worshipped by those who adhere to the unreformed Romish faith, and when it is told us that now after a lapse of 300 years it is suddenly proposed to set up the same object in the same part of the church as an architectural ornament only, it is hard not to distrust the uses to which it may come to be put or escape the apprehension that that which begins in 'decoration' may end in 'idolatry.' If this apprehension is a just and reasonable one then there exists that likelihood and danger of superstitious reverence which the Privy Council in Phillpotts *v.* Boyd pronounced to be fatal to the lawfulness of all images and figures set up in a church. . . . What I am here discussing, and must again repeat, is not the belief in an idol of wood and stone, but the practice of involving in devotional exercises outward and visible forms as inculcated in the devotional books of the Roman Catholic creed. This is 'the fond thing vainly invented' of the 22nd Article of Religion, and the mere fact of the existence of such a doctrine in that Church among whose membership intellectual power and acquirement is rife is to my mind a conclusive answer to the suggestion that the intellect or knowledge of the present day may be relied upon to take the place of those safeguards which it was the work of the Reformation to establish. But another consideration must not be lost sight of. If the intelligent and the cultivated no longer need the protection of old days, can the same be said of the weak and ignorant? The parish church is for all—not for a class—and if the crucifix, placed as it is in this instance, is lawful in St. Peter's Church, it is lawful for every parish church in the country, and may be provided for every congregation, strong-minded or weak, instructed or ignorant. Upon the whole, then, I must declare that the crucifix surmounting the screen in this case has not been shown to my satisfaction to have been placed as an architectural decoration only, and there does exist a danger and likelihood that it was to be made an object of 'adoration' and 'superstitious reverence.' The court must now order it to be removed, but the removal of the figure leaving the cross standing will be a compliance with this order." The judicial committee in delivering judgment in this case on appeal cited portions of the leading passages which I have read from Lord Penzance's judgment, stating that in these observations of the learned judge they concurred and selected them as the grounds of his decision, which commended themselves to their judgment, and, under the circumstances of the case, affirmed his decision on this point. I have cited these passages in Lord Penzance's judgment which appear to be most pertinent to the question now under the consideration of the court, inasmuch as Chancellor Kempe in the case of "The Vicar of Great Bardfield *v.* All having an Interest, &c.," held that if a chancellor was satisfied that the figure of a crucifix if erected on a chancel screen in a church was not likely to be used superstitiously he was at liberty, notwithstanding the above judgment, under special circumstances in the exercise of his discretion by faculty to sanction its erection on the ground, among others, that his lordship from his observations was partly induced to make the order he did, owing to the presence of the stations of the cross in the church, to the figure being illuminated by candles on either side of it which were lighted when they were not required for the purpose of giving light, and to other accessories in the service of the church. The Chancellor of Norwich in the case of the Vicar of Timberhill having refused a faculty for a figure of Our Lord on the Cross, with the side figures of St. Mary and St. John graven in wood on a rood-beam, in a later case "The Rector of Barsham *v.* the Parishioners" granted a confirmatory faculty for the retention of similar figures in the centre of a chancel-screen, on the ground that there was no rood-loft or candles round the figures and that the service was conducted in accordance with the directions of the Book of Common Prayer. But Chancellor Dibdin in a later case held that he was bound by the decision of the Arches and the judicial committee in the Ridsdale case, saying :—"I understand that case to have decided that a crucifix with or without figures placed on the top of a chancel screen cannot on account of its special history and significance in that position be regarded as a mere architectural decoration, as it ought to be on a reredos, and that faculties for crucifixes so placed ought not to be granted." (The Vicar of Richmond *v.* All persons Interested.) But assuming that an incumbent applying for such a faculty would not himself sanction a crucifix so placed to be used superstitiously, it is not in his power to prevent persons attending the services of his church and clergy temporarily officiating in it or his successors—if so minded—from thus using it, which is further reason why, in my judgment, such faculties ought not to be granted. But if a chancellor has a discretionary power to grant such faculties I should decline to do so on the grounds that parish churches and the services in them are provided for the use of all persons permanently or temporarily resident in the parish, whatever their theological views may be on ritual or otherwise—if they are desirous of attending their parish church—and that the introduction of such an ornament would give offence to a large portion of the lay members of the Church of England and mark the Church as a ritualistic instead of a national church such as was contemplated at the Reformation.

Notice of appeal was given.

BAMBOROUGH AND DUNSTANBOROUGH CASTLES.

IN Northumberland, close to the Scottish border, there are, writes a correspondent of the *Scotsman*, two noteworthy castles by the sea. One for 1,500 years has been inhabited, while the other after a few centuries of occupancy fell into disrepair, and became some 300 years ago a roofless ruin.

Nearest to the Tweed is the hale veteran which Scott, in "Marmion," describes as—

> proud Bamborough,
> King Ida's castle huge and square.

It is over twenty miles from Berwick, and the nearest stations, five miles distant from it, are Belford or Lucker on the North-Eastern Railway. Travellers by that route are familiar with Bamborough, which, from the train silhouetted against a grey sky-line, resembles a betowered North Berwick Law. A closer acquaintance dispels this abruptly confined appearance, for then we realise the extent of this kingly pile, with its ancient coronet of battlements crowning the bulwark of rock. The foreseeing Romans singled out as an overawing position for a caer this basaltic pyramid, and Ida, who was the first Saxon king of the land north of the Humber, on the site of Agricola's invulnerable fort founded the enduring castle which still overlooks this seaboard land of old renown. We may well gaze with respectful reverence on hoary-headed Bamborough. It summons up remembrance of things past, for it arose in the dark ages, it sheltered generation upon generation of men who made their mark on history when Christianity but faintly glimmered in Britain, and here on the threshold of the twentieth century, having had its youth renewed like the eagle's, from its eyrie on the wave-washed steep, it may live to see the advance, the changes of many eras more. About 100 years after King Ida, Edwin, who gave his name to Edinburgh, reigned in his stead over Bernicia. He married a Kentish princess, and she brought to his royal mansion of Bamborough that man of powerful personality, Paulinus, Augustine's follower. He it was who first lit up the Northumbrian pagan darkness with the initial gleams of Christianity. Oswald, a successor of Edwin's, sent to Iona for a monk to continue the enlightening work. Aidan came, and fancying the seclusion of sea and sandgirt Lindisfarne, settled there under the ken of the protective castle. Bamborough sometimes unawares entertained angels, but its inhabitants knew full well they had for neighbours on Holy Island saintly men, whose prayers availed them much, for story telleth when Penda, king of Mercia, besieged "the royal city, the impregnable rock fortress of Bamborough," its height and strength defeated his pagan hosts. He then resolved he would smoke his Christian enemies out, and piled the wreckage of the village huts against the gates, trusting to an easterly gale to help him in his fell scheme. The saint in his island cell saw the murderous clouds of reek, and falling on his knees, besought his Divine Master's attention, crying, "See! Lord, what ill Penda is doing." This appeal had barely been uttered when the wind changed, and the choking smoke from the fire the heathen had kindled turned on them and routed them.

Aidan, living on an eyot, which, as Scott says, according to the tide varies from continent to isle, found a cell on the mainland a necessary temporary abode; so at the entrance of Bamborough village, the first of the Holy Island saints sought a resting-place, and therein, after sixteen years' work among the Northumbrians, the zealous monk died. On the site of this pioneer evangelist's death chamber rose the House of God we can worship in to-day, and which is dedicated to him, bearing his name in remembrance. This church of St. Aidan's is now famed for sheltering the remains of two of the three heroines whom Bamborough saw do noble deeds, which gained for them (though they sought it not) a lasting renown. These intrepid girls, who in their own homes were remarkable only for their skill in handling the distaff and proficiency in housewifery arts, went forth when occasion demanded and used with cunning daring the manly weapons which fate put into their hands. Bamborough from its stately height can scan the Great North Road, which passes through Belford, so the castle spied brave Grizel Cochrane, all unaided, execute the scheme she had planned, whereby her father's (Sir John Cochrane's) death warrant was arrested and his life was thus saved, for the knight's friends, ere another came, had gotten him a pardon, and he lived to become Earl of Dundonald, the ancestor of the man who led the relief column into Ladysmith. Grizel on this perilous undertaking set forth alone, dressed as a boy, and thus disguised watched the mailman taking his ease in a change house, extracted the charge from his pistol and rode on to a wooded dell to await him. The slim stripling faced him there, frightening him with the boast that there were more men in ambush. He delivered his despatches in terrified haste, and so this frail girl, made bold by her filial affection, did the work of a gang of highwaymen. Grizel was a west country lass, but Bamborough bred two heroines, and within its sacred precincts they take their rest. In the old manor house opposite St. Aidan's salt-encrusted church dwelt fair Dorothy Forster, whose history Besant has recorded in a novel bearing her name. Her brother Thomas had succeeded to the castle and its lands, and he insisted on dark-eyed Dorothy, his favourite sister, who was surpassingly beautiful, coming to rule over his household. In course of time he joined the unhappy Stuart cause, when "the Standard on the Braes of Mar was up and streaming rarely." At Preston the English Jacobites suffered defeat, and General Forster, with many other leaders, was seized and condemned. It was then Dorothy, like Grizel Cochrane, became full of indomitable courage, all for the love she bore her imprisoned kinsman. She determined to rescue her hot-headed brother, though she found when she belonged to an attainted house she was suddenly bereft of influence and money. Disguised, she set forth for London, and after suffering many perilous hardships on the rough journey, she reached her goal. There she persisted in trying to rouse cautious friends in his favour, and at last by womanly wiles obtained an impression of his prison key, released him, and arranged his subsequent escape. He died in exile, but his body was brought home to be laid beside his forefathers in the chancel of St. Aidan's, and there also in course of time the devoted sister was buried beside him. In the wind-swept God's acre which girds the church where the fighting Forsters lie, a monument, backed by the blue breakers, and within sight of the scene of her heroism, has been reared to a girl whose laurels were won in the thunder of winds and waves. For centuries Bamborough from its far-seeing position has been by day and night a guiding-point or star to those who sailed along a coast beset with reefs, frilled by hungry, husky-voiced surf. In a lighthouse on one of the neighbouring Farne Islands dwelt Grace Darling, and she it was who spurred her father on to launch a boat, and helped him to battle through opposing waters to reach and save the crew of the wrecked steamship *Forfarshire.*

Lancelot, the boldest knight of King Arthur's following, ever seeking work for his sword, little dreamed he would "die a holy man," and so it was with Bamborough. For over 1,000 years that domineering castle took a leading part in the history of the ever-turbulent borderland, and yet like Lancelot, though seemingly intended only for warful purposes, during the latest centuries of its long life it has been a truly Christian castle, replanting in the hearts of the sick and needy faith and hope, by administering "the greatest of these," charity. On the death of General Thomas Forster the castle fell into the possession of Dorothy's uncle by marriage, Lord Crewe, Bishop of Durham. He left some 9,000*l.* a year to the trustees of Bamborough to dispense as they thought best in good works. Dr. Sharp, Archdeacon of Northumberland, who died in 1792, augmented this sum, and he rearranged the administration of the charities, so, under his advice, a surgery and dispensary healed the sick, and also within the walls of the war-worn stronghold children were taught and trained and outfitted mentally and physically for life's work. The archdeacon ordained that warders should watch and a gun should thunder from the old keep, not to watch for or ward off invaders, but as a signal to call the men of Bamborough together to launch the lifeboat, which the castle also supplied. Those who were not rescued from the waves, but had their lives hammered out of them by the cruel surf, were buried by the castle funds in English earth, and every shipwrecked seaman who came to land was fed, clothed and supplied with means to return to his home; so in its old age the belligerent castle laid down its arms and became famed for its bountiful charities.

Bamborough's picturesque village is nowadays a popular resort in summer. On Thursdays the castle is open to visitors, who can see over the modern home made in the stout walled tower, in the centre of which is a well 145 feet deep, enabling the garrison when besieged to be free of any fear of suffering from thirst. Among the old armour and tapestries on the walls there are the portraits of Lady Crewe and her equally beautiful niece, Dorothy Forster. The workmen are busy renovating the other parts of the whilom "royal mansion," transforming it again into a lordly pleasure house.

If the traveller of to-day thinks the model village of Bamborough, built round a wooded common, too frequented in summer, and seeks complete solitude, he can hie him along some 12 miles of sea-bordered road in the direction of Alnmouth, where at Dunstanborough he will find a mighty ruin, which no kindly chisel or hod of lime is saving from time's effacing finger. The only inhabitants within the 15 acres the walls once enclosed are now sheep and seagulls. Embleton, the nearest village to this vast, deserted pile, is a hamlet which, like Bamborough, boasts of an ancient church. But Embleton cottages, which cluster under the lee of a quarried, stony hill, are built close to the street; no flowery-bordered paths through small gardens lead up to their doors, as is the custom throughout the most of the north country on either side of Tweed. The inevitable means of locomotion for the modern wayfarer, cycle or motor, have to be left at Embleton, while the visitors on foot follow a seldom-used cart road behind the ridge of sandhills along to Dunstanborough. The track is carpeted by those hardy little flowers which smile up at one from out of seemingly arid soil, "stars that on earth's firmament do shine," and in its season a crimson cranesbill sprinkles the ground with its blood-red blooms. Somehow Dunstanborough, though in the midst of an epic country on the high road between the long antagonistic kingdoms of England and Scotland, has comparatively little historical interest. It was John, Earl of Lancaster, who, not satisfied with his manor, and wishing to rear a memorial to his grandsire, Simon de Montfort, commanded this huge castle to rise on the pillared peninsula among the shifty sandhills. He laid the foundation in 1313, and it took upwards of half a century to finish the great structure. When the builders had been working for about a decade the earl, its founder, was beheaded at Pomfret. The castle and its manors in the succeeding centuries were twice confiscated, but those to whom they were restored seemed fated to lack male heirs, and again and again this castle by the sea has been owned, as now, by one of the gentler sex. There is no doubt Dunstanborough's history, early in its career, was a thorny one, as became a stronghold of the leader of the red rose. During that period it was taken and retaken five times, and in 1538, for all its size and nature-made site, it was reported to the Government authorities as a "ruinous place and of small strength." Not only were its comparatively new walls shattered by artillery, but they were struck by lightning, which wrecked a tall tower, one of which was dedicated to the Lancastrian Queen Margaret, who sought refuge there, and part of the Queen's Tower still remains above a gully well named the Rumbling Churn.

Looking from Dunstanborough towards Bamborough there shines a long stretch of golden sands ending in a reef called Embleton rocks, round which the North Sea curls and frets. There in 1511, James IV.'s good seaman, Sir Andrew Barton, met his death. He and two of the Earl of Surrey's sons, Sir Edward and Sir Thomas Howard, had an obstinate engagement off this coast. The fortunes of the Englishmen prevailed, though, in the Elizabethan ballad bearing his name it tells how stout Sir Andrew fought a good fight. When a cunningly-aimed shaft pierced the Scottish captain's armour as he mounted to the point of danger, he fell mortally wounded, but bravely heartened on his sailors, assuring them—

A little I'me hurt, but yett not slaine,
I'le but lye down and bluide awhile,
And then I'll rise and fight again.

But the sound of the whistle he blew to encourage his men sounded no more above the din of battle. Some years ago a heavy gale and its attendant breakers washed away from Embleton reef the sand covering a slab of rock on which at ebb tide was found inscribed in Roman capitals the name of Andra Barton.

Dunstanborough is haunted by a poor knight, who seems to have had a most unfortunate extension of life meted out to him as an eternal punishment. As far as we can glean from the legend, the sentence of his unrestful immunity from death was unjustly passed upon him for having failed to accomplish a quixotically gallant attempt to free a captive princess from a wizard's spell. He, sheltering in the castle's ruined gallery, fell asleep, and in his dreams was invited to rescue from the enthralment of an unholy spirit, a lady who lay in the hidden be-diamonded hall. He received instructions how to proceed, but in the heat of the fray threw aside the enchanted sword given to him to cut the spells, trusting to his own familiar blade, which proved useless against the glamorie of the Black Art. Perhaps the idea of great treasure in a secret hall arose from the bright sparkles in the quartz rocks, called Dunstanborough diamonds. It is delectable work on a summer's day hunting for these stones on the caverned shore, or, weary of the search, to sun one's-self, like the seabirds on the flat plateau of rocks which face the German Ocean, and there meditate on the futile efforts of John of Lancaster, who vainly planned to raise a castle to stand, as Bamborough has stood, for over a thousand years; or one like its other ducal neighbour, Alnwick, to shelter the same race for generations. He little thought the visitation of God as well as man's blasting artillery would, in a few centuries, level his ambitious structure nearly to the ground. But one piece of a tower is kept upstanding, so that those who sail the seas may use it as a steering point, for the injunction of Solomon is, even in this radical age, reverenced, "Remove not the ancient landmark which thy fathers have set." So it comes to pass the remnant of the short-lived, gigantic castle is useful to-day only to shelter the fleecy, four-footed people who nibble the salt-tasted herbage within its crumbling wall, or to act as a finger-post to the helmsman as he guides his craft homeward over the houseless ocean's heaving field.

DISCOVERIES IN BABYLONIA.

THE Constantinople correspondent of the *Daily News* has had an interview with Professor Hilprecht, the director of the expedition sent out by the Pennsylvania University, whose discoveries at Nippur have carried back the history of the Babylonian civilisation to a period more than seven thousand years before Christ. Nippur itself has been identified with Calneh, one of the four cities mentioned in the book of Genesis (chapter x. verse 10) as the beginning of the kingdom of Nimrod, "The mighty hunter before the Lord," and also as the place to which Nebuchadnezzar brought the captives of Judea. The Professor described the principal results of this year's work as follows :—

First and most important is the discovery of the library of the great temple at Nippur. As far back as eleven years ago, when Dr. Peters, of New York, was at the head of the expedition, Professor Hilprecht pointed out that the remains of this library would be found at the very place where the discovery has taken place this year. The find has been much more important than could have been anticipated. In the course of three months no less than 17,200 tablets, covered with cuneiform writing, have been recovered. These are not of the character mentioned in my former notice of the discovery of tablets, namely, the recovery of private business contracts, conveyances, letters and the like, but bear more resemblance to the contents of an ordinary library. The tablets are historical, philological and literary. They treat of mythology, of grammar and lexicography, of science and of mathematics. There is reason to believe that they will for the first time enable the world to form an adequate idea of life in Babylonia such as only could be possible by the discovery of a national library, recording the national progress in literature, science and thought generally. No document is found in this collection of a later date than 2280 B C. As this date marks the invasion of the Elamites, the fact adds confirmatory evidence that the library was destroyed during this invasion.

The unexplored remains of the library are even more extensive than those already examined. The tablets are generally arranged with regularity on clay shelves around the rooms of the library, and Professor Hilprecht estimates that at their present rate of working five more years will be necessary to excavate and examine the contents. He thinks it probable, judging from the contents already found in the rooms excavated, and various other reasons, that the unexplored part will yield 150,000 tablets to be added to those already discovered. As the library was one of great renown, the chief glory of the temple in early Babylonia, the chief college for instruction in law and religion, which as in all early systems were inextricably bound together, and, indeed, in all studies judged worthy of attention, it is evident that no examination of the contents can be too careful. It is, in fact, hardly too much to say that if the unexplored parts should prove as rich in results as that already found, there will be no example in the world's history, not even in Egypt, of so complete a recovery of the records of an ancient civilisation.

The American expedition had to suspend its investigation of the great library temporarily in order to continue its systematic work at the temple, and to complete the examination of the south and eastern lines of the walls of fortification of ancient Nippur. These walls show clearly the different epochs in which they were constructed. There are, first, portions of which the builders were the pre-Sargonic rulers. These are followed by the works of Sargon (3800 B.C.), and of Naram-Sin, his son ; then about a thousand years later are the fortifications of Ur-Gur, to be followed by the later Cassite kings, belonging to the comparatively modern period of 1700 to 1100 B.C. The numerous weapons found along the whole line of fortification, especially in the lower strata, were welcome material for determining the methods employed by besieging armies in the earliest periods of Babylonian history.

In the course of the present excavations a palace belonging to the pre-Sargonic period was uncovered beneath an accumulation of 70 feet of rubbish on the south-western side of the Shatt-en-Nil, dividing Nippur in two parts. Professor Hilprecht himself, having never been doubtful as to the actual site of the temple library at Nippur since his first visit to Babylonia in 1889, considers the discovery of this large building with 600 feet frontage, which will probably turn out to be the palace of the early priest-kings of Nippur, as the most important result of this year's campaign. Already the few rooms excavated have given valuable results in the shape of pre-Sargonic tablets, of seal cylinders of the earliest type, and clay figurines of early date and great interest. The palace was very extensive, and at least two storeys high. At a later period it had been used as a chief quarry for furnishing materials for public and private buildings in Nippur. From the indications which have been met with, both in the palace itself and in the materials which have been taken from it for building purposes, Professor Hilprecht anticipates that statues will probably be found of a character similar to those which the French expedition has discovered at Tello.

Other discoveries made by the Philadelphian expedition are of value. Some of the earlier conclusions have had to be corrected. The large building discovered at the beginning of the first campaign, a portion of which was unearthed by the Rev. Dr. Peters, the first director of the expedition, a comparatively well-preserved structure with a remarkable colonnade, has now been excavated completely, and its character been ascertained. It proves to be a thousand years later than Dr. Peters judged it to be. It is a work of the Persian or Parthian period. The later cruciform structure of the temple, which aroused considerable interest because of its form and magnitude, appears by this year's exploration to have nothing to do with the temple proper, but to be a strong fortification constructed some time during the last two centuries preceding our era, and of considerable importance even at the times of the first Roman emperors, when the Temple of Bel was in ruins, having ceased to be a sanctuary.

A tomb uncovered in the course of this year's excavations belongs to quite a late period, probably between the commencement of our era and 50 A D. It was found below the floor of a chamber in the fortress, and within it were discovered various objects of interest—a gold ring, a chain of gold and rosettes, two square plates of gold, and two heavy gold buckles, with lions' heads set with precious stones, for holding up the toga, or whatever was the dress corresponding to it. A large number of Hebrew and Mandæan vases, of seal cylinders and of objects of art were discovered, among which may be noted two large stone objects once belonging to the temple outfit of Bel, a well-preserved sacrificial table with a new inscription of King Naram-Sin, and a huge black vase dedicated by Judea of Lagash, that is Tello, to the temple in Nippur.

The French expedition has likewise done valuable work during the months of March and April of the present year. Like the Americans, they have suspended work during the hot weather. Their special exploration was carried on by M. de Sarzec at Tello, on the south-eastern side of the great canal connecting the Tigris with the Euphrates, known as Shatt-el-Hai, or River of Life. The chief finds of this year's work are about ten thousand inscribed tablets, the precise character of which is still unknown. Judging from the contents of similar finds made in previous years at Tello, they relate probably to sacrifices in the temple.

A third expedition, of German origin, has been at work in Babylonia since the spring of 1899. It is under the control of the well-known architect, Dr. Koldency, of the Berlin Museum. So far its results have been chiefly in the line of topography. The little temple of Nin-makh has been discovered, and the palace of Nebuchadnezzar has been explored. But with the exception of the discovery of a well-preserved Hittite monument, which, however, nobody up to the present can read, and of a few fragmentary inscribed stones, nothing of importance in the line of inscriptions has been unearthed. Notwithstanding this present lack of important "finds," the expedition, I am glad to say, will be continued.

NOTES AND COMMENTS.

It is satisfactory to find that the venerable M. Hébert has arrived at the dignity of Grand-Croix of the Order. He is now among the oldest of French painters, for he gained the Prix de Rome in 1839. Among his numerous paintings is the *Peasants of Cevennes*, of which a reproduction appeared in *The Architect.* For many years he was Director of the French Academy at Rome. Another Grand-Croix is M. Guillaume, the sculptor, who at the present time is director of that institution, and, indeed, is known in Rome as the ambassador of French art. Of late years he has not produced many works in marble or bronze, his attention being mainly occupied with his official duties and contributions to the literature of art. M. Gérôme, whose paintings of ancient Roman life and examples of polychrome sculpture are among the most remarkable works of the century, has been advanced to the degree of Grand Officier, and he is accompanied by M. Carolus-Duran, whose portraits are often seen in Royal Academy exhibitions, and M. Frémiet, the sculptor. Among the new Commanders are M. Jean-Paul Laurens, M. Alfred Philippe Roll, painter; M. Ernest L. Barrias; M. Chaplain, the medallist; and M. J. A. E. Vaudremer, president of the Jury of Architecture, and one of the veterans in architecture. The rank of officers has been increased by additions of M. Frantz Jourdain, architect and journalist; M. Lucien Magné, architect; and M. Maurice Adolphe Yvon, architect to the Minister of the Colonies.

The Aquarium of Brighton is now the property of the Corporation. It is considered, however, that the buildings are not altogether worthy of so important a watering-place, and it was arranged that designs showing alterations should be invited from architects in competition, the prizes offered being 250*l.*, 150*l.*, and 100*l.* The subject came before the last meeting of the Corporation, when the following amendment was proposed:—"That before the Council advertise for competitive designs for dealing with the Aquarium, an architect of standing be engaged to prepare a report, with plans, as to the utilisation of the existing buildings, together with a rough estimate of the cost, and that after this report has been submitted to the Council the architect be retained to draw up the terms of conditions upon which competitive designs be invited, and that such architect be retained as assessor to assist the Council in adjudicating upon the designs submitted, the architect's fees not to exceed 200 guineas." It was said that unless some arrangement of the kind were adopted the designs sent in were likely to represent works varying from 30,000*l.* to 100,000*l.* After a discussion the amendment was carried by a large majority. It was also agreed that the following addition should be made:—"And that such assessor be not employed to carry out the work after such competition." The arrangement is not without interest, for it may become a general practice to call in a specialist to make a preliminary report before designs are invited in addition to the assessor who is to judge them.

The curriculum of the Architectural Association for the session 1900-1901 has been issued. The arrangements are similar to those of past years, which experience has proved are adapted to insure the aims of the Association. No organisation equally efficient is to be found in any other country, and it might be added that in no other profession is there an educational body conducted on similar lines. The combination of lecturers, instructors and visitors is calculated to remove a student's difficulties and to inspire him with a love of the art. The fees are also moderate. The classes will open early in October. The first of the ordinary general meetings will be held on October 26, when a paper will be read by Mr. Francis Bond, M.A., on "French and English Cathedrals." At the successive meetings of the session the following papers will be read:—"The Legal Position of the Architect," by Mr. L. L. Macassey; "The Use of Rolled Joists in Construction," by Mr. A. T. Walmisley; "Colour in Architecture seen through an Artist's Glasses," by Mr. A. Wallace Rimington; "Hints on the Preparation of Studentship Drawings," by Mr. Beresford Pite and Mr. R. W. Schultz; "Flats," by Mr. Edwin T. Hall; "Cretan Architecture," by Mr. D. T. Fyfe; "Gothic Architecture and the Basis of its Beauty," by Mr. E. S. Prior; "The Paris Exhibition," by Mr. E. W. M. Wonnacott; "Rowton Houses," by Mr. H. B. Measures; "Small Suburban Houses," by Mr. H. D. Searles-Wood and Mr. H. R. Appelbee.

The use of wills as aids to the history of English churches was recommended by Mr. R. G. Price, F.S.A., at the visit of the Sussex Archæological Society to Penshurst Church. He pointed out how the wills often contain bequests of both goods and money for the maintenance and enrichment of the fabric, and not infrequently references are made to the various side-chapels within the churches, their dedications, altars, images and lights, and also the brotherhoods connected with the churches. Mediæval wills also supply details relating to the arrangements then adopted for service, a lack of knowledge respecting which has too often led in recent times to the destruction of many features in our parish churches, each precious for the history it contained. In churches prior to 1536 there was over the entrance to the chancel a large crucifix called the Holy Rood, with the figures of St. Mary and St. John on either side. Within the chancel there was a figure of the Virgin Mary and of the saint in whose honour the church was dedicated, and who was called the "Head Hallow" by our forefathers. Besides these there were in every church images of other saints, which varied according to the locality, occupation of the inhabitants, &c. It was also explained that Mr. Leland Duncan, in his researches, had found three wills of pre-Reformation date, which threw some light on the arrangement of Penshurst Church in early times.

The Manchester Town Hall committee have had to come to a decision to prevent the public from looking at Ford Madox Brown's wall-paintings in the Town Hall unless accompanied by an official attendant. Their action is justified. Last week it was discovered that one of the works, *The Observation of the Transit of Venus by William Crabtree at Broughton*, 1639, was defaced by pencil marks which were evidently drawn by a trained hand. It is expected that the damage caused by the lines can be remedied, but the committee are right in considering the vandal's will rather than his deed. The hall which is adorned by the paintings is only dimly lighted, and as the archaic style of the pictures is not approved by the populace there are times when the hall is deserted. There were, consequently, opportunities for displaying the destructiveness which on the continent is believed to be one of the characteristics of all Englishmen, but the Corporation may be trusted to secure the safety of the paintings henceforward.

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: PART OF LADY-CHAPEL, SHOWING ARCHED RECESSES.

The lady-chapel of Lichfield Cathedral is not without peculiarities. In its height it nearly corresponds with the choir, there is a semi-hexagonal, while the windows are larger and more elaborate than are usually found in such parts of cathedrals. Lichfield Cathedral is without a crypt, and it is possible the recesses or vaulted chambers which are to be seen on the exterior were intended for sepulchral use, in order to contain the remains of dignitaries who could not be buried beneath the floor of the chapel. There is a tradition that Bishop Langton's remains were deposited in one of the chambers. He was one of the most liberal benefactors to the cathedral. In the reign of Edward I. he held the office of High Treasurer, but Edward II. was no friend of Langton. That is eminently creditable to the prelate, who suffered because he was an opponent of Piers Gaveston. When the favourite was recalled from exile Langton was imprisoned on false charges, and several years elapsed before he was able to recover his liberty.

DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY. PERSPECTIVE VIEW. THE CENTRAL HALL. PRINCIPAL FLOOR PLAN.

PROPOSED UNION OFFICES, WALSALL.

SYON MONASTERY AND SYON HOUSE.*

ISLEWORTH was formerly known as Gistelworth and Istelworth Worth signifies an enclosure, and the prefix probably is derived from the Anglo-Saxon word Gisel, a hostage. In 1263, Simon de Montford encamped in the park with his barons, and in the following year Sir Hugh le Spencer, Constable of the Tower, marched to Isleworth and "spoiled" the house of Richard, Earl of Cornwall, king of the Romans. Lysons suggests that this house was the "Moated Place." For this act the mayor and others were imprisoned. The first monastery and convent was founded by Henry V. in the second year of his reign, 1414, for sixty nuns, of which number one to be abbess of the order of St. Augustine; and for twenty-five religious men, of which number thirteen to be priests, four deacons and eight laymen, all to be under government of the confessor, to live separately, viz. the nuns in a part of the house by themselves, and the confessor and brothers in a part distinct, chastely both in mind and body, according to the regular institute of St Bridget. The religious house was founded in his manor of Istelworth in the parish of Twykenham, near the Thames, and called by the name of the Monastery of St. Saviour and St. Bridget of Syon, of the order of St. Augustine, by which name of title the said abbess and nuns were enabled to purchase lands, to sue and be sued.

Matilda Newton was appointed the first abbess, and William Alnewyk, the first confessor. King Henry V. endowed the house with the rent of 1,000 marks, to be paid yearly out of the Exchequer till he or his heirs should settle lands of that value.

The value of its income was 1,731*l.* 8*s.* 4*d.* per annum. In the last year of his reign Henry V. procured an Act of Parliament by which he was enabled to separate the manor of Isleworth from the Duchy of Cornwall. It is worth mentioning that the value of the land was 1*l.* 13*s.* 4*d.* per annum. In the year 1432, being eighteen years after the foundation of the monastery, Henry VI. granted permission to the abbess and convent of Syon to remove to a more spacious edifice which they had built upon their demesne within the parish of Isleworth. This record is in the possession of the Duke of Northumberland.

It is to be observed that it was only in convents of Bridgetines that monks and nuns were permitted to live under the same roof. The choir of the chapel was divided by a screen or partition, placed lengthwise with the structure, and both monks and nuns had their own set of stalls There was no access from one side to the other except for priests on their way to Mass The chapel was practically a double chancel under one roof, the aisles of which opened into each other by a grille, the gate of which was unlocked only for the entrance and departure of the priests for and after their masses for the nuns. The precautions taken to insure their isolation from the monks were extraordinary. The door had two keys, both different, one of which was kept in a chest on the monks' side, and the other in a similar chest on the nuns' side. To each of these chests were three keys, all different, and kept by the abbess and two sisters on the one side, and by the confessor general and two brothers on the other. The cloisters were also divided. With all these precautions, however, it is probable that they had readier means of communication than those subterranean passages which by absurd traditions are supposed to have connected neighbouring and sometimes distant monasteries; for the report of Lord Cromwell's agents on the eve of the Reformation was particularly unfavourable to the chastity of the nuns of Syon.

Thomas Stanley, the second Earl of Derby, was buried in the monastery of Syon in 1521, a few years before its dissolution in 1532 by Henry VIII, it being one of the first of the larger monasteries that was suppressed, the convent having been accused of harbouring the king's enemies. In 1541 it was made a prison for the unfortunate Catherine Howard, who was kept a prisoner there from November 14 to February 10 following, being three days before her execution. She was kept very strictly, but served as queen. The body of Henry VIII., whose funeral procession is said to have exceeded in magnificence any ever seen in England before or since, was rested a night at Syon on its way to Windsor, 1547. It was through the confessor of the monks at Syon that the Charterhouse monks were induced to sign to the king's supremacy

King Edward VI., in the first year of his reign, granted the monastery of Syon to Edward, Duke of Somerset, the Lord Protector, who had before rented some premises at Isleworth under the convent. The duke built on or near the site a noble mansion, the shell of which, although it has undergone various alterations, still remains. After the duke's attainder for treason Syon House reverted to the Crown, and Sir Thomas Worth was made the keeper. In 1553 the king granted it to John, Duke of Northumberland, who was beheaded in the first year of Queen Mary, and his estates became forfeited to the Crown. The queen made Sir Henry Sidney keeper of the park and woods. The house she kept in her own hands till 1557, when she restored the convent of Syon, endowing it with the manor and demesne of Isleworth.

The new monastery was soon afterwards dissolved by Queen Elizabeth. Clementia Thresham, the abbess, died at Royston, in Northamptonshire

Margaret Dely, one of the nuns, was buried at Isleworth in 1561, but the greater part of the community emigrated to Lisbon, where in Fuller's time the convent existed, and had acquired such endowments that they were said to lay up 600*l.* Queen Elizabeth in the year 1560 made Sir Francis Knolles keeper of Syon House for life, the reversion of which place she afterwards granted to his son Robert. In 1563, the sickness then raging, the Marquis of Winchester (Lord Treasurer) went to survey Syon House, it being intended that the Court of Exchequer should be held there In a letter to Sir William Cecil (Secretary of State), dated September 23, he reports that there was room for the whole court with all their attendants. The Lord Treasurer, the Under Treasurer and Chancellor were to have two chambers and a gallery between them to consult in, the chamber of presence for their dining and the great chamber for their servants.

In the year 1604 Syon House and the manor of Isleworth were granted to Henry, Earl of Northumberland, in whom were already vested the various leases made by Queen Elizabeth of the demesne lands. This earl was treated with the utmost rigour of the Court of the Star Chamber, for what at most amounted to a presumption of his being privy to the Gunpowder Plot. He endured a tedious confinement of fifteen years in the Tower, and was obliged to pay a fine of 30,000*l.* In a letter which he wrote to James I. from the Tower, dated April 14, 1613, after representing the difficulties under which he laboured as to the payment of his fine, he offered the king Syon House with the manor of Isleworth as the only property he could alienate, his other estates being entailed. His Majesty, it seems, did not accept the offer.

Syon House was considerably altered by his successor (under the direction of Inigo Jones, it is said) in 1659, which date is on all the leaden pipes. On August 27, 1646, the House of Commons agreed that the Earl of Northumberland, to whose care the children of Charles I. had been entrusted, might remove them to Syon House on account of the infection then spreading.

Charles, Duke of Somerset, who had Syon House in right of his wife Elizabeth, sole heir of Joceline, Earl of Northumberland, lent it at her highness's desire to Queen Anne (then Princess of Denmark), who resided there some time

This noble mansion, which occupies a large quadrangle, is one of the most conspicuous ornaments in the county of Middlesex. It is a structure of magnificent dimensions and faced with Bath stone.

The entrance to the mansion is protected by a porte cochère, from which a flight of steps lead to the great hall, which is 66 feet by 31 feet and 34 feet high The pavement is of white and black marble, and the sides are enriched with four antique marble colossal statues dug out of Herculaneum and Pompeii, representing Scipio Africanus, Livia, Cicero and a priestess. Under a screen of columns is an extremely fine bronze of the Dying Gladiator, cast at Rome by Valadier. The hall opens into the vestibule, 34 feet 6 inches by 30 feet and 21 feet high, which is most superb. The floor is of scagliola with mosaic ornaments in imitation of marble, and the walls are enriched with bassi-relievi and gilt trophies. Twelve columns of real verde-antique marble, supporting gilt statues, life-size—these were dug out of the Tiber about a century ago and purchased for the late duke's grandfather at a cost of 1,000*l.* each, said now to be worth about double—and 16 pilasters of the same rare and costly material, finely polished, impart an air of sumptuous magnificence to this apartment, appropriately called the Room of many Columns. Some remarkably fine bronzes are here, including "Hercules" and "Hector taking leave of his Son." The dining-room, 62 feet by 21 feet 7 inches and 21 feet 9 inches high, is ornamented with marble statuary and paintings in chiaroscuro after the antique. At each end is a recess with Corinthian fluted columns, supporting an entablature. The ceiling is very elegant. In this room there are copies of several of the most celebrated statues in ancient and modern times, more especially of the Flora from the Vatican; the Apollo from the Capitol; a Muse from Mæcenas's Villa; Ceres, from the Capitol; Bacchus, from Florence, by Michel Angelo; and the Diana from the Vatican. Over the mantelpiece is a fine alto-relievo of the Three Graces in marble, busts of the third duke and duchess, by Kirk, and the fourth duke and duchess. There is a very fine table of Roman mosaic taken out of the Baths of Titus.

The State drawing-room, 44 feet 6 inches by 21 feet 7 inches and 21 feet high, is the *chef d'œuvre*. The walls are hung with gorgeous striped crimson satin, said to be the first of its kind executed in England. The tables are of costly mosaic, found in the Baths of Titus and purchased from the Abbé Furietti's collection in Rome. The glasses are of very large dimensions, and the chimneypieces of the finest statuary marble, inlaid and ornamented. The ceiling is most exquisite. It is covered by pictures almost innumerable by Angelica Kauffmann, each of them perfect. Here is the celebrated Crystal Vase, which cost 14,000*l.*, and was presented by the ladies of Ireland to one of the Duchesses of Northumberland as a mark of grateful regard and esteem on the present duke's grandfather quitting the Lord Lieutenancy. It is a piece of workmanship of the most exquisite description, representing Hibernia with the harp lamenting the departure of her Grace. One of the wolf dogs of the island is depicted in silver listening with mute admiration. The whole of the figures and work are of native origin and production, and consist either of gold, silver or precious stones. The stag's head from which it emerges is beautifully carved out of Kilkenny coal, and the base of the whole is formed of bog oak. The fountain is formed of Irish crystal, and is profusely decorated with jewels. No words can convey an adequate idea of this equally beautiful, rich and chaste production.

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* A paper read by Mr. A. C. Doughty at the visit of the members of the Upper Norwood Athenæum.

The Great Gallery, 135 feet by 14 feet and 14 feet high, ranging along the whole eastern side, contains the library and museum, and some very fine medallion portraits and beautiful views by Angelica Kauffmann, who also painted the panels of the ceiling. Here is the couch of the great Akbar, one of the most powerful Indian princes of the sixteenth century, presented to the late Duke by Lord Hardinge, and a very fine crucifix in amber belonging to Cardinal York, last of the Royal Family of Stuarts, 1807.

The private dining and drawing-rooms contain some very fine old paintings. In the former is a celebrated Reynolds of Elizabeth, Duchess of Northumberland.

In the rooms through which we have wandered we have seen some of the finest pictures of the old masters; a collection with examples by Sir Joshua Reynolds, Sir Godfrey Kneller, Sir Peter Lely, Sir T. Lawrence, Vandyke, Angelica Kauffmann, Barry, Inigo Jones, Sidney Cooper and others too numerous to mention, may well be called a grand one.

I will not attempt, gentlemen, to describe the pleasure-grounds which so amply demonstrate themselves. Suffice it to say that it was here the first mulberry tree was planted in England and is still flourishing. The grounds and park cover 300 acres, of which 150 are gardens and pleasure grounds, laid out by Capability Brown.

The conservatory is one of the finest in the kingdom, and cost 40,000*l.* It has a splendid dome in the centre and elegant vases in front, I believe executed by the celebrated Grinling Gibbons.

Before leaving Syon it may not be out of place to give you the history of the family name of Percy, of the House of Northumberland. The origin of the appellation is somewhat curious. About the year 1088, in the reign of William Rufus, Malcolm III., king of Scotland, invaded the English borders and so reduced the castle of Alnwick that the besieged were obliged to surrender. They only requested that the king would receive the keys in person. They were brought by one Robert de Mowbray, Earl of Northumberland, who, standing within the walls, extended them on the point of a lance, with which, on the king advancing to take them, he pierced the king's eye. For this deed he received the name of Pierce-eye, since corrupted to Percy.

THE GUILD OF ST. LUKE, DUBLIN.*

THE records of the Dublin Guild of St. Luke, from which my information has been gleaned, consist of sixteen volumes, giving a most minute account of all transactions from the date of the constitution of the guild, by a Royal Charter of King Charles II., on October 4, 1670, till its disestablishment by Act of Parliament in 1841. They are complete, no book is missing, and are remarkably well kept and written, and copiously indexed.

They came to light quite accidentally. Mr. William Martin, of 18 St. Stephen's Green, was doing some work for Mr. F. C. Earle Bland, at 10 St. Stephen's Green, in October 1897. Mr. Bland mentioned to Mr. Martin's foreman that he had the books of the Guild of St. Luke; this he reported to his employer, who brought the matter before the Dublin Guild of Master Painters, whereupon the officers bought them and presented them to the guild, by whose kind permission they have been placed at my disposal for describing.

The chief function of these guilds was the regulation of their particular trade or business to the exclusion of all "intruders," but they also had a public function. The Corporation of Dublin consisted of representatives of the twenty-six guilds. The Guild of St. Luke contributed three members. They also had a constable who arrested all persons guilty of breaches against their various by-laws.

The Guild of St. Luke the Evangelist, I believe, had a more ancient existence than these records show, but their historical existence only dates from their charter.

The guild was governed by one master and two wardens, representing the three faculties of cutlers, painter-stainers and stationers, and a council who were elected on August 24 of each year. On May 14, 1765, voting by ballot was instituted. Samuel Cotton (cutler) was first master, Richard Carney (painter-stainer) and John North (stationer) were first wardens. When anyone was elected to an office he had the option of serving his year or paying a fine, as per by-laws Nos. 11 and 12 of 1670; on refusal the master paid 10*l.*, the warden 5*l.*, and a beadle 30*s.* Another by-law enacts "that a warden shall not neglect his duty on any days of attendance, being duly summoned thereto, or shall pay the sum of 5*s.*," and another regulation was "that if a councillor appear not in a 'gowne,' he shall pay 2*s.* 6*d.*" All members had to swear allegiance to the king, and to be of the Protestant religion. I have here for your examination two parchments with the oaths subscribed to, which deal mostly with debateable doctrinal subjects. The first Roman Catholic was admitted July 2, 1793, but I find no Roman Catholic could be apprenticed, or ever was taken as an apprentice. Edward Rurke was the first Quaker admitted, May 13, 1712, with a special form of affirmation.

The guild had in the year 1719 193 members, consisting of 86 painters, 49 cutlers, 52 stationers, and 6 licensed hawkers.

The charter lays down "that no one was permitted to use or exercise any of the arts and mysteries of the guild, or vend, utter or sell them, or import them from over the seas, without being duly apprenticed for seven years within the city of Dublin, or seven miles thereof without the consent of the master and wardens." They continually prosecuted persons for intrusion and fined them various amounts, or in default "to lye in ward." For instance on July 6, 1708, George Bodely having been taken up the day before for intrusion, he offered a picture of the Queen's head in a gilt frame, which they were graciously pleased to accept. This picture is at present in the possession of Mr. John Good. The guild got together several pictures in this way; for instance, one Carleton on being brought up in 1720, presented a picture of King William, and in 1730 John Seymour presented one of George I. as a fine.

When strangers applied for admission they were often required to do a proof piece or directed to pay some fine for being admitted. In 1698 Martin Skinner was admitted on presenting a picture of King William, and in the same year Andrew Crook presents a silver cup weighing 14 oz. In 1684 Peter Surville presented a picture, &c., and in 1699 we find Edward Exshaw and John Roberts being refused admission as "no painters, nor ever had produced a proof piece."

The hall, which was first in St. Audoen's Arch, and afterwards in several other places, must have looked remarkably well on a gala occasion. Some seventeen to twenty pictures hung round the walls, all in gold frames; a fine suit of armour, presented by the Hon. Colonel Paul, who had married a daughter of Henry Pooley, master, was in a corner. There were also a gilt throne or presidential chair (which is at present, I believe, in existence), the oak chest, and on the table a silver cup bought in 1700 (it weighed 50 oz. 15 p., and the cover and crest weighed 16 oz. 5 p.), and finally, the great sword of State borne by the Master on riding the Franchises. At a funeral service the pictures were all draped, and the coffin in the centre of the room was covered with a pall of "haire shagg" (bought in 1700 at a cost of 8*l.* 15*s.* 10*d.*).

Like more modern bodies, they often had difficulties in getting their members together punctually in securing a quorum, and officers neglected their duties. In 1697 Warden Evans was fined 5*s.* for "not attending last day when summoned, and this day is absent again and none to appear with the key of the chest, he having gone to England and no deputation left." John Fox, master, refused to give up the chest and contents in 1679; they got it back again, but there is no note as to how they settled their differences. In 1713 the master complained "that on the last hall day he had no appearance of members, by reason whereof he could do no business. Carried unanimously, that if any brother be not present at least within one hour of the time, shall put into the poor-box the sum of 6*d.*" In 1702, August 24, no quorum could be got together, as the militia were in training. They had some difficulty with their clerk, William Winter. On January 5, 1702, the master moved that William Winter might be removed from the clerkship of this guild, and brought it into a debate, urging and alleging that he had neglected the office of a clerk, entered his name on the book of brothers contrary to agreement, affronted some brothers, and by Robert Caddall was charged to have torn a receipt out of the book of receipts, whereupon a full examination being made and a long debate had, he was discharged from and acquitted of all accusations. Three years later the master informing the house that William Winter did not perform his duties in several matters relating to the affairs of this Corporation, and several other complaints being made against him, he was dismissed. Six months later Winter presented a petition desiring to be reinstated, and "'twas voted to be a scandalous petition, reflecting on the late master and wardens, and ordered to be burned by the beadle," which was done accordingly.

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* From a paper by Charles T. Keatinge, Fellow Institute of British Decorators, published in the Journal of the Royal Society of Antiquaries of Ireland.

The charter gives very good reasons for its being granted :—

> That whereas we are informed that hitherto there have been no rules or orders laid down in our city of Dublin for the more skilful and better regulating of the several arts and mysteries of cutlers, painter-stainers, and stationers, for want of which many inconveniences do daily arise to our loving subjects there arising, and whereas humble suit has been made unto us for the erecting of a Corporation, the same to consist of persons skilled in the exercise of the said several arts and mysteries, thereby the better to prevent the evil inconveniences and abuses to our loving subjects, which, through the unskilfulness of divers persons exercising the said several arts, daily happen.

This object, the doing of good work, was most carefully looked after by by-law No. 24, March 5, 1676 :—

> If any person of this guild being a painter-stainer, shall at any time hereafter paint or color any oyle work whatsoever that is to stand without doors in the weather, and shall instead of an oyle priming use size therewith, or shall not stop the cracks or sliffts in timber with oyle putty, or shall laker any work whatsoever that is to abide the weather instead of gold, such person on so offending, upon complaint being made to the Master of such illwork made and done, whereby His Majesty's subjects are abused and injured, that upon a view being taken of such insufficient work, and by them adjudged so to be, shall order the offending party for the first offence to pay 6*s.* 8*d.* sterling, and for the second and more offences of this nature, the full value of the work ill done.

This law was by no means a dead letter, as we find in April 1700 that :—

> Pursuant to an order to view of the 1st inst., the master, Mr. Robert Caddall, Mr. Warden Ellis, and several others, reported to this House that they had been and viewed some outside oil work done in York Street by Mr. Wm. Sherriff, painter-stainer, and that they do find the same insufficient and defective, and done contrary to the rules and orders of this guild, and abuse to the subject, whereas the said Wm. Sherriff hath been guilty of the same offence and breach of the law, and forgiven the fine in that case for insufficient work done in Dame Street, it is hereby ordered that the fine of one-third the value of the work be levied on him, and paid to the use of the guild.

Even the celebrated heraldic painter, Aaron Crossley, sometimes did bad work. In 1704 Mrs. Elizabeth Gunn complained :—

> That though Crossley did not perform the agreement he made for painting the figure of a ship, which was brought to the hall and viewed, and agreed upon that he ought to finish it soon, or she should not pay him.

In 1698 we have a similar motion with reference to the faculty of stationers :—

> Upon a motion made that the title and preface of Cocker's "Arithmetic" were printed, and put to Hodder's "Arithmetic," and thereby those were deceived that bought them for Cocker's "Arithmetic," on examination of the matter, Mr. Patrick Campbell and Mr. Jacob Miller acknowledged the error, and confessed that a very few, or not above twenty, were disposed of or sold so altered, and promised that what titles were printed should be destroyed, and for the future no book should be sold with a contrary title or preface.

And in 1699—

> Upon information that the New Testament was lately printed by Bryan Wilson and Cornelius Carter for James Malone and Partners, with very many errors, &c., throughout the impression, ordered that the stationers, members of this guild, have leave to meet and advise what course or method is fit to be taken to suppress or detect the same, and that the clerk do draw any petition or address as shall be thought fit or advisable.

They were also careful with reference to goods belonging to others In October 1704 Mr. Richard Baldwin, fellow and registrar of Trinity College, by order of the provost and fellows, sent a letter by the master, desiring some method should be laid down and followed to prevent buying of books belonging to the "schoollars."

> Ordered that the master do make application to the Lord Mayor and to the Dean and Chapter of Christ Church against such persons as are known to use the trade of buying scholars' books, &c.

These regulations so strictly carried out, needless to say, stamped all the work done by the guild as first-class. Indeed, some of the work turned out prior to the nineteenth century cannot be surpassed.

By-law No. 24, 1670, is worth noticing :—

> It is enacted, established, and for a law made, that such of this Fraternity as shall speak evil of or revile the Master shall pay 10*s.* to the use of the Hall, and such as shall speak evil of or revile any one of the Wardens shall pay 5*s.* to the use of the Hall, or lye in ward.

In 1700, Matthew Gunne was fined 10*s.* for reviling the master, Mr. Robert Caddall; and in 1726 it was ordered that Mr. John Drinkwater (not a likely name for a brawler), a free brother of this guild, be and is hereby fined the sum of 10*s.* sterling, for reviling and speaking evil of Mr. Page, the present master, pursuant to a by-law for that purpose, and the Master having complained to this Hall of the same, and that he be sued forthwith for what he oweth the Corporation.

By-law No. 8 of the same date provides :—

> That any brother that shall on any quarter days, or other days of meeting, shall strike, sweare or be disturbant, he shall pay to the Master 1*s.*, or lye in ward.

In all the 171 years of the guild's existence I find only one case of disorderly behaviour. That is a note, "That Darby Doyle be prosecuted for assaulting Warden Smurfitt," bearing date May 7, 1731.

Another most interesting by-law specifies :—

> That no brother shall at any time colourably go about to get another brother's work from any person whatsoever on the penalty of 40*s.*, or lye in ward.

That this was enforced we find by reference to April 9, 1700 :—

> Upon complaint made by Mr. Robert Caddall that Mr. Henry Dowdall had taken work out of his hands for which he had agreed and begun, and that the said Dowdall had entered upon his work by laying colouring on the priming first laid by the complainant. Upon examination thereof, and appearing to be truth, and contrary to the purpose, intent and meaning of the by-laws of this guild, it is hereby ordered that the said fine of 38*s.* be levied on and paid by the said Hy. Dowdall for the use of this guild.

Could any of our members of Parliament be induced to promote a Bill on such lines as these it would help painters a good deal.

ST. JOHN'S, CLERKENWELL.

A GOOD deal of doubt has always existed as to what was the exact shape of the original church of St. John, Clerkenwell, but recent discoveries, says the *City Press*, have settled the question once and for all. Two portions of the wall of the old church have been unearthed, and their situation proves conclusively that the original church was circular in its construction. When the Knights of St. John came to Clerkenwell in 1100 they built a church and various other buildings, which formed a priory, the only remaining portions of which, with the exception of the gateway, are the crypt and the walls of the parish church of St. John. These form the choir of the great priory church. In making a better entrance to the crypt at the west end recently the builders came upon a wall. The authorities at once made an entrance at the other side, where also they discovered a part of the same wall. The débris was cleared out, and the two portions were exposed to view. These walls are circular in plan, and therefore show that the original nave was round, that it led into the choir (which now forms the parish church) by a flight of steps, and that the crypt was reached by a smaller flight. Its plan is the same as that of the Temple Church, and the churches of Cambridge, Northampton and Little Maplestead, Essex, the last named of which was also built by the Knights of St. John. The diameter of the nave was 65 feet, which is a little more than that of the Temple Church, and the same size as that at Northampton. It was built exactly at the same time as the Temple Church, and both were consecrated at the same time by the same ecclesiastical dignitary—Heraclius, Patriarch of Jerusalem in 1185, who was then in England preaching a crusade. Dr. Freshfield, V.P.S.A., who is himself a Knight of Justice of the Order of St. John of Jerusalem, at the time the discoveries were made came forward and offered to pay for excavating in St. John's Square, in order to discover if any other portion of the wall remained. This was done, but without success, the investigation showing that years ago the square had been excavated for gravel, and the holes filled up with rubbish. The walls must have been removed at that time. The priory was besieged by Wat Tyler, who captured it, beheaded the grand prior, and set alight to the priory, which burned for seven days. On the site of the round nave a rectangular nave was built, as other walls in the square prove, and this also was destroyed, leaving only the choir, most of which remains to the present day. The masonry of the newly-discovered walls is quite clean and as perfect as the day on which it was worked. It still shows plainly the tool marks and the various masons' marks. At present the church authorities are renovating the crypt, which is a beautiful piece of work, and is, with the exception of the chapel in the White Tower at the Tower of London and Edward the Confessor's work at Westminster, the only specimen of the earliest architecture in London. The authorities are handicapped in their work of entirely renovating the crypt owing to the want of funds. Many parts of the ancient church which have been found from time to time are preserved in the crypt. Amongst the most important may be mentioned a number of fine tesselated tiles, and some richly-painted and gilded masonry, which evidently was largely used in the old church. All these, together with the ancient wall, may now be seen.

THE NATIONAL GALLERY.

THE following works have been lately acquired by the National Gallery by gift, bequest or purchase:—Lady Layard has presented a fresco painting of the "Madonna and Child," by Giovanni Bellini. This picture, which represents the Virgin seated facing the spectator with the Holy Child in her lap, formed part of Sir Henry Layard's collection. A section of wall has been removed with the fresco upon it. It is placed in the central octagon at Trafalgar Square, No. 1,696.

Mr. G. F. Watts, R.A., has added two important works to those which he had already given to the Gallery—"The Triumph of Love" and "Time, Death and Judgment" These pictures are hung with the Watts Collection in the National Gallery of British Art, Millbank.

Mr. C. Fairfax Murray has given to the Gallery a life-sized portrait picture by Jan Vermeer, of Delft, representing a man seated at a table taking a book from a little boy who stands on his right. The Gallery previously possessed only one example of this master. The picture is hung in Room XI., No. 1,699, under the title of "The Lesson."

A large body of subscribers to the Burne-Jones Memorial Fund have presented to the National Gallery the well-known and important work by Sir Edward Burne-Jones—"King Cophetua and the Beggar Maid" This picture is now exhibited in Room XXI. at Trafalgar Square, No. 1,771, where it will remain for six months before its removal to a place among modern British pictures at Millbank.

Mr Henry Vaughan has bequeathed to the Gallery a life-sized statue of Flaxman, by Weeks, and a similar statue of Sir Joshua Reynolds by Foley. These works are placed with the other sculpture at Millbank.

Miss Pilbrow has bequeathed a life-sized, half-length portrait of a gentleman in black, with lawn collar and cuffs, holding his gloves in his left hand, by a painter of the Dutch school. This picture is hung in Room X., No 1,700.

A portrait, said to be of Governor Herbert, by Devis, has been lent to the National Gallery by the trustees of the National Portrait Gallery, and is hung in Room XIX.

The Gallery has also acquired by purchase a picture by Fra Bartolommeo, a painter of great eminence, hitherto unrepresented in the national collection. The picture represents the Virgin seated on the grass, clad in a red robe and blue mantle, holding the infant Saviour, who leans forward to embrace the little St. John. Behind is a rich landscape, with a city in the distance. This picture is hung in Room I., No. 1,694.

MORLAIS CASTLE.*

THE county of Glamorgan can boast of possessing a large number of castles and fortified houses. It contains as many as forty regular castles, excluding the fortified habitations. These are chiefly located in the Vale of Glamorgan, many of them being within easy reach of Cardiff, and some are amongst the most extensive and magnificent structures in the kingdom. Morlais is one of the hill castles of the county, and is built on its northern boundary. It is situate on a conspicuous hill north of the town of Merthyr Tydfil, and on the eastern side of the Taff fechan river. Although built almost on the bank of the Taff, it does not take its name from that river but from a small brook which lies at a greater distance on the eastern side. It is built on the domains of the valiant Welsh prince, Ivor ap Cadivor, or better known as Ivor Bach. He owned the whole of the land that lies between the Rhymney and Taff rivers, then known as Senghenydd. It appears that when the land was apportioned between the Norman lords, the site on which the castle was built was considered to belong to the lordship of Brecknock, till a very serious dispute arose in regard to the ownership at the time of building the castle. The contending parties were Gilbert de Clare (Earl of Gloucester and Lord of Glamorgan) and Humphrey de Bohun (Earl of Hereford and Lord of Brecknock). This quarrel had far-reaching results, as will be stated hereafter.

The castle is now almost a complete ruin. The outline of the surrounding walls may be traced, but none of the towers remain. The keep is the only portion that remains intact. All the foundations are tolerably perfect, and these were partially excavated at the command of Lady Charlotte Guest, the well-known author of the "Mabinogion." This was done in 1833. Twenty-five years later a much more thorough excavation of them was made by the late Mr. G. T. Clark, of Talygarn, who then resided at Dowlais. He took measurements and produced a plan which shows the construction of the castle in great detail, and was published by him to elucidate his account of the building, which appeared for the first time in the Journal of the Cambrian Archæological Association in 1859.

Morlais Castle covers a considerable area of ground. The court is an irregular oval, 140 yards north and south and 60 yards east and west. It is enclosed by an embattled wall capped by five or six towers, and is surrounded by a moat, discontinued on the west side. The only remaining entrance to the court is on the east side, but it must have had another, and probably a larger one, on the other side, now covered by the débris. The keep tower had two storeys. The lower, a polygon of twelve sides, 28 feet in diameter, has a central column with corresponding facets, branching into twelve fan ribs, which, forming arches, support the roof. The whole chamber, though extremely elegant, is quite plain, the mouldings being a mere chamfer, with no other decoration. The court had the usual necessary arrangements, such as a kitchen, several fireplaces, a large water tank, an oven, singularly built of limestone, and a smithy. A large heap of mixed iron slag, charcoal and clinker was found near the forge. Mr. Charles Wilkins also found some coal in this heap. The most mysterious object in the court is a very large and deep shaft excavation. It measures about 27 feet square and 40 feet deep, but was much deeper when made. This is supposed to be an abortive well, but no water could be expected to be reached at less than 400 feet. The purpose of this excavation has not been satisfactorily explained. A fine engraving of the castle as it appeared in the year 1741 was published by the Brothers Buck, and is of special interest as it shows the keep and its surroundings in a much more perfect state than they are at present. Only a few short historical references have been made during this century to the castle by antiquarians of high repute, such as Theophilus Jones, author of the "History of Breconshire," and the late Mr. T. Stephens, the author of the "Literature of the Kymry." But really no serious attempt was made to place the history of the castle on a solid foundation until the late Mr. Clark undertook the task. He appears to have exhausted the subject. Forty years have passed away since he wrote his memorable article, but so far as I know, no writer has ever questioned the correctness of his conclusions, neither has anyone attempted to shed additional light on the subject. The history of Morlais remains to-day where Mr. Clark left it. I have to be content with summarising what he has written at length, "for what can the man do that followeth the king?"

The local tradition that the castle was built by Ivor Bach is untenable. He was the owner of the land on which it stands, and his name, as a place-name, is preserved to this day in the neighbourhood. We have Pant-cad-Ivor, Cadair Ivor and Rhyd-y-bedd, where tradition says that he was buried. But the daring Welsh prince was probably dead before Morlais Castle was built. However, it is now proved beyond doubt that the castle was built by Gilbert de Clare, the lord of Glamorgan, about the end of the thirteenth century. The circumstances that led to its erection were the following:—Gilbert de Clare, having protected the lower part of his territory by the construction of Cardiff and Caerphilly castles, felt that he had still to guard against the sudden inroads of the natives from the north of his domains. To meet this need he constructed Castell Coch at the lower end of the Taff Valley, and later he built Morlais Castle at the upper end of the same valley. These effectually checked all such attempts on the part of his enemies, and also they served to cut off the retreat of any spoilers who, having invaded the vale, might be returning by this route to their native fastnesses. Probably the object that Gilbert had in view in the construction of the castle was not attained, for at this time the pacification of the Welsh people was to a great extent accomplished. Had it been built a hundred years earlier it might have been of great service. Indeed, it is more than probable that the building was never completed, its inutility having become apparent before that stage was reached. The dispute with regard to the land also must have retarded the completion of the building.

A short account of this dispute must now be given, for really it forms the most interesting part of the history of the castle. Humphrey de Bohun, lord of Brecknock, held that Gilbert de Clare had built Morlais Castle on lands that belonged to him, and complained of the injury in the King's Court. This occurred in the fourteenth year of King Edward I. Upon hearing the complaint, the king forbade both lords to proceed to hostilities and so disturb the peace of the country. But, contrary to the king's command, Gilbert's vassals and retainers invaded Humphrey's territories, burning houses, killing several persons, carrying off cattle, not even sparing the churches. At first Humphrey's men remained passive, but ultimately they followed the robbers into Gilbert's lands, slew some of them and restored their own castle. This local war was carried on on both sides of the Taff-fechan river, but the chief engagement appears to have taken place at Maes-y-Faenor, where the lord of Brecknock obtained victory. The slain at this battle are supposed to be buried under the tumulus, or mound, which forms a conspicuous object on a field near the Vaynor Church. The king, hearing of these contentions, determined to restore peace, punish the offending lords and establish his own authority. He therefore issued a commission of inquiry as to the facts of the case, and afterwards summoned the lords to account for their conduct. The Council first met at Amboresbury and afterwards at Westminster. Both lords were found guilty of insubordination and insult to the king. Edward himself pronounced judgment upon them, depriving them of their liberties during their respective lives. They were taken into custody and cast into prison till ransomed at the king's pleasure. The humbled lords were in time allowed to compound with the Crown; Gilbert, having been found to be the chief offender, was fined 10,000 marks, and Humphrey, being considered to have acted under great provocation, 1,000 marks. On producing security for the payment of the money they were restored to liberty and the possession of their estates. In this manner the king effectually asserted his authority over the lords of the Welsh Marches, who had become a source of trouble to him.

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* A paper read by Mr. W. Morgan at the annual meeting of the Cambrian Archæological Asssociation.

From the foregoing remarks it is clear that Morlais Castle is chiefly celebrated in history, not so much for the part it played in the subjugation of the Welsh as for the occasion it gave to the king to bring the lords themselves more under his control and direct authority. The castle was allowed to fall into decay at an early date, and the ravages of time have completed its destruction. The Morlais property, including the castle, passed from Ivor Bach's descendant, Thomas Lewis of the Van, by the marriage of his daughter with an earl of Pembroke, to the Windsor family, in which it still remains.

GEORGE THOMAS CLARK.*

It was originally my intention to give you a short description of the objects of archæological interest in this valley and its immediate neighbourhood, but in getting up my facts I was struck with the impossibility of arriving at accurate information on any Welsh archæological subject without consulting the works of a late very distinguished inhabitant of this valley, Mr. George Thomas Clark. His name is, I am sure, familiar to all of us, but some only know of him as the trustee and manager of the Dowlais Works, others only as the author of "Mediæval Castles, cartæ et munimenta," and other important and interesting books. Some possibly only as a brilliant conversationalist, full of apt quotations, ready wit and an inexhaustible fund of appropriate anecdote. Instead of telling you what you probably all know already, and have been better told than you could be by me, I thought I would give you a short account or memoir of his origin, his life and his work, and that this could not fail to be of interest and instruction even to those who knew him well.

Most of the men who have risen to eminence in connection with the iron trade of this county have been self-made men, with few advantages of birth, education, or culture. The Guests were Staffordshire farmers; the Bacons North country men, probably from Westmoreland, as were the Fothergills, who were small freeholders, commonly called statesmen in that county. The first Crawshay was a son of a Yorkshire farmer who cultivated his own land. All of them were able, hard-working, business men, but it is not till the fourth generation that we find any evidence of culture among them, when the late Robert Crawshay took up photography, then in its infancy, and became no mean artist. George Thomas Clark (the subject of my memoir) came of a well-known family, chiefly remarkable for the number of celebrated divines, both Church of England and Nonconformist, which it produced. His father was the Rev. George Clark, chaplain to the Royal Military Asylum, Chelsea, well known as a prominent Abolitionist and a friend of Wilberforce. Among his ancestors were the Rev. Samuel Clark, of St. Albans the Rev. Samuel Clark, of Wycombe, and another Rev. Samuel Clark, known as the martyrologist. Mr. Clark was born in 1809, and educated at Charterhouse (known to all of us as the school of Colonel Newcombe and Clive Newcombe). On leaving school he studied surgery under Babington, but apparently he had not found his vocation, as he left this profession and turned to engineering. It may be said of him as Bishop Magee said of himself on giving up the medical profession, that by so doing he had saved many lives. The change of profession was a fortunate one, for this neighbourhood at any rate. In making his start in his new profession he was fortunate in serving under Brunel, who was then at work on the Great Western Railway. He designed on this line the Basildon, Moulsford and Maidenhead bridges. I do not know his reasons for leaving the Great Western. He probably thought that there was greater scope for his talents in India, and he obtained the post of engineer to the Great India Peninsula Railway, presumably by the recommendation and influence of Brunel. His stay in India was a short one, as he was compelled by the state of his health to return to England. A paper which he wrote in the *Westminster Review* on sanitary reform (then an infant science) was much noticed, and obtained for him the post of sub-commissioner under the first sanitary Act, with a salary of 1,000*l.* a year. The drainage scheme of Rugby was carried out during this period under his superintendence. In 1850 he married Anne, daughter of Henry Lewis, of Greenmeadow, a member of an old Glamorganshire family, and one of the first families who established works at Dowlais. Mrs. Clark deserves ever to be in remembrance in Dowlais for her charity and kindness of heart. The Dowlais Hospital was for years carried on at her expense, although the works supplied the building and the medical aid. She was also a constant and a kindly visitor to the patients. Mrs. Clark made a fine collection of Nantgarw china, mostly acquired before the china lovers and collectors were aware of its value. About 1850 Mr. Clark was employed by Mr. John Murray to correct and revise his "Handbook," but I cannot say that even Mr. Clark's wit and humour were able to make it lively or amusing reading. In 1852 he became under the will of Sir John Guest trustee of the Dowlais estate, jointly with the late Lord Aberdare. I do not know if we can give him the credit of bringing in Mr. Menelaus, but under their management, and by the introduction of the Bessemer process of steel-making, the works, which had been passing through a time of acute depression, revived and began the era of perhaps their greatest prosperity. On the close of the trust Mr. Clark became chief adviser and a sharer in the profits of the Dowlais Company. One of his last acts in connection with the company was the establishment of the great Cardiff branch of the works. Mr. Clark took an active and useful part in public affairs. He was for many years chairman of the Merthyr Board of Guardians, and he made use of his sanitary and engineering experience to promote the construction of the Merthyr waterworks and Pentwyn reservoir, to the great benefit of Merthyr and Dowlais. The schools of the districts are also indebted to Mr. Clark for his share in their management and his enlightened and far-seeing views on education. As a fellow-volunteer I must render a tribute to Mr. Clark, the originator and first colonel of the 3rd Volunteer Battalion of the Welsh Regiment, now so ably commanded by Colonel Cresswell. The last years of Mr. Clark's life were spent at Talygarn, an estate purchased from the Lisles, where he found a congenial occupation in planting rare shrubs and trees and in constantly enlarging the house to contain the books and objects of art which he had for years been accumulating, and which he still bought with great taste and judgment. And there on January 31, 1898, he died, having survived his wife thirteen years, and was buried in the churchyard of Talygarn Church, which he had shortly before rebuilt—a fitting monument for a long, blameless and useful life.

I now come to the hardest part of my task, and one which I unfeignedly wish was in better and more skilful hands. Able conversationalist as he was, Mr. Clark was little given to talk about himself, even with his most intimate friends, and as he had outlived all his contemporaries, I have little more than my own personal observations and remembrances to go upon. An old friend described him to me as a man of the strictest probity, inflexible will, faithful and loyal to his friends, and I cannot give, or wish to give, any better description. The late Lord Aberdare said of him that he was a man so various that he seemed to be not one but all mankind's epitome. My earliest recollection of Mr. Clark was at a volunteer review luncheon. I was about nine years old, and, to my dismay, was put on a chair and told to return thanks for the ladies. Mr. Clark, leaning down and pretending to be prompted by me, made a speech which convulsed his audience with laughter. I have no doubt that he was able to make allusions and pay compliments, as coming from me, which he could not have done on his own behalf. In a short time I felt quite at my ease, and not quite sure how much of the speech was my own. It is curious that, although Mr. Clark was noted for the quickness and readiness of his wit and his inexhaustible stock of anecdote, I can give no special bon-mot or witty saying of his. Much of his success in speaking and conversation must be put down to his readiness of quotation and repartee, and the delightful and humorous twinkle in his eye when making a point.

I think that one of the notable features of his life is that it is not his connection with great and successful business undertakings by which he will be remembered, but by the work of his leisure hours. His chief delight was in hunting up and studying old genealogies, histories and manuscripts, and those who knew him never failed to wonder at the extent and accuracy of his knowledge. Another point in his character was his power of attracting and retaining the friendship of distinguished men. I have already mentioned Sir Isambard Brunel and Sir John Guest. He was also the life-long and very dear friend of the late Lord Aberdare, of Tom Bruce (brother of Lord Elgin, and manager of the great Seafield estate), of Freeman and Dean Stanley, of the Wilberforce family, the Macaulay family, of Sir George Arthur (Governor of Bombay), of Sir Bartle Frere, Sir Henry Layard, Mr. Christopher Mansel Talbot, of our late Bishop Ollivant, of Mr. Robert Oliver Jones, and many others whose names I cannot now recall, all men of distinction and ability. In addressing the Cambrian Archæological Society and many interested in Wales and Welsh antiquarian lore I feel that no apology is due for departing from the usual custom of the presidential address in order to help to keep green the memory of one to whom Wales owes so much. Personally, I feel that it has been a great privilege to have been allowed to give this incomplete and inadequate account of an old and revered friend, and I hope it may lead some one with greater literary talent to write a life worthy of him and his work.

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* An address delivered by Lord Aberdare at the annual meeting of the Cambrian Archæological Association at Merthyr.

URICONIUM EXCAVATION.

THE annual report for 1899 of the Rev. T. Auden and Mr. Herbert Southam, hon. treasurer and hon. secretary respectively of the Uriconium (Wroxeter) Excavation Fund, states:—"A beginning of the new work was made in September by exploring to the floor line a large room connected with the baths and adjoining the basilica. Soon after the work was suspended for the winter, however, the war broke out in South Africa; and this, combined with other circumstances equally unforeseen, caused great anxiety to the committee as to the best course to pursue. Eventually, after consultation with the Society of Antiquaries in London, and with Lord Barnard, it has been decided not to ask for the payment of subscriptions promised for the current year, but to suspend the proposed work for a short time, until there are fewer claims on the public purse and a prospect of raising without difficulty a sufficient sum annually to carry the work to a successful conclusion. The balance in hand has, therefore, been placed on deposit at the bank, until the Society of Antiquaries and the local committee are satisfied that a fitting time has arrived to recommence the excavation. It is believed that this temporary but unavoidable suspension will in no way interfere with the interest which has thus far been taken in the work, and that when operations are resumed the appeal will again meet with a kind response, both from those who have already contributed and from those whose interest in the matter has yet to be awakened." The receipts for the year included 18*l.* 11*s.* 6*d.* in donations and 157*l.* 15*s.* in subscriptions promised for five years, the president of the Fund (Lord Barnard), who owns most of the site, and Sir Offley Wakeman, Bart., giving 25*l.* each. Of the total of 176*l.* 16*s.* 6*d.* received, only 46*l.* 1*s.* 2*d.* was spent, 26*l.* of this being in labour, and 130*l.* 5*s.* 4*d.* lies in the bank.

CELTIC AND INDIAN INSTITUTIONS.

A PAPER was read at the meeting of the Cambrian Archæological Association by the Rev. E. Hartwell Jones, rector of Nutfield, on "Some Parallels between Celtic and Indian Institutions." The reader began by reviewing recent anthropological researches into the mutual relations of the Celtic and Indian races. Though the idyllic pictures of their civilisation had been overdrawn, yet the Aryans possessed great capacity for development. Prehistoric society could not be reconstructed by means of philology unaided. It must be supplemented by the evidence of custom, law, tradition and myth. It was established beyond doubt that the modern Aryans were a mosaic of various races. Wales was an amalgam of diverse elements; indeed, Aryan signified now little more than a phase of culture. Yet the Aryan races had moulded the institutions of Europe. The parallels between Indian and Celtic institutions might be divided into three classes. I. Under the first category falls, *e.g.* the story of Llewelyn and his hound Gelert. In an old Welsh MS. the assailant is a serpent—suggesting an Eastern environment. In Egypt the tale takes a balder form. But its original source is a collection of stories entitled "The Three Hundred Births of Buddha," where the aggressor is a snake and the defender an ichneumon. These were brought over to the West by Crusaders, itinerant monks and students. This class affords a remarkable instance of literary transmission. But this is by no means the only case in which the West borrowed from the East. II. Underneath the structure of Celtic society lies the principle of the family; the tie is blood relationship. An incident in the Mabinogi of Kilhwch and Olwen, where Arthur asks, "Who art thou? for my heart warms unto thee, and I know that thou art come of my blood," presents an illustration of a widespread belief in the secret and mysterious emotions produced when relations previously unacquainted are in each other's presence, and the fortunes of Celtic races had tended to deepen this taste for domestic life. Hence their reserve. Hence their incapacity for more extended organisation and political enterprise. In like manner the family was the basis of Indian society. (*a*) With Indian and Celt the hearth played a prominent part, being at once the centre of family life and the witness of the rights of kindred. But the religious associations that gathered around the hearth faded away in Wales. (*b*) The hearth being the symbol of family ownership and inheritance, special responsibilities rested on the chief of the household or the eldest son. They were answerable for its maintenance. This was the case in both countries. (*c*) The head of the household is supreme: he uttered the law to wife, children and slave; he was the priest; he was the link connecting the family with a long line of ancestors, and, as with the Indians, so probably with the Welsh, ancestor-worship formed a feature of the householder's duties, but the religious usages in Wales had been obscured if not obliterated by ecclesiastical influences. (*d*) The fire was sacred, and various considerations concurred to lend it importance. The care of it was one of the chief functions of the male representative of the house. Dadenhurdd, or the "uncovering of the hearth," the symbolic action by which the eldest son asserted his claim to hereditary land, recalls the Irish custom of "the breaking of the cinders," and both find their counterpart in India. The marriage customs in both countries suggest some instructive comparisons; marriage by capture had been practised by the Celts as well as by the Indians. But kinship through the female line was un-Aryan, and it was doubtless learnt from previous strata of population. Again, in both the tribe was an extension of the family. Other parallels might be found in their language, in the position of women and children, in the regulation and suppression of lynch-law, burial customs, laws of property, treatment of foreigners and the growth of hospitality. This class then comprised remnants of a common inheritance. III. To this head might be referred the legends, common to both countries, of the reappearance of national heroes like Merlin's Leminok, the Leiz Breiz of the Americans, and Llawgoch. Akin to these legends were the stories of submerged worlds, kingdoms or palaces, like that of Llyncllys, on the Welsh border, and that concerning the Rajah Achul Sing. Such legends expressed in a fabulous form the working of general laws of the human mind. It was clear that the Celtic race had won its present position by a process of evolution from an original barbarism; but while the Indian had remained stationary and stereotyped, lying, as it were, under an enchantment and listening as in a dream, the Celt had attained to a high standard of culture. Throughout his history he had exhibited the operation of two laws—(*a*) of adaptation as seen, *e.g.* in the alteration of legends, substituting a European setting to the story for an Eastern, influenced by climatic conditions and from time to time intersecting and colliding, or intermingling and combining with surrounding races. But Celtic conditions died hard; witness the tribe and the village community. (*b*) The law of development. The mental capacity that marked the Aryan found more and more scope as he progressed in his march. But, granting all this, some of the ideas go back to a time beyond human ken. Somewhere in the Far East there had been a reservoir of civilisation, the common source of oriental and occidental culture before Pharaoh tyrannised on the banks of the Nile or Nimrod held sway in Nineveh.

DURHAM ARCHITECTURAL AND ARCHÆOLOGICAL SOCIETY.

AN excursion was made on the 16th inst. by the members of this Society to Raskelf, Crayke and Sheriff Hutton, Yorkshire. They assembled at Raskelf station about ten o'clock, and proceeded in waggonettes to Raskelf Church, where they were shown over the building by the Rev. Dr. Preston. The party included the Rev. Dr. Greenwell, of Durham (president of the Society), Mr. R. Oliver Heslop and Mr. W. H. Knowles (hon. secretaries), Mr. J. G. Gradon (secretary, Durham) and others from Newcastle, Durham, Darlington, Stockton, Sunderland, Blythe and Consett. Raskelf Church proved of great interest to the visitors, who afterwards drove to Easingwold and were shown over the church there, which is a fine example of the Perpendicular period. The village of Crayke was subsequently visited, and here Dr. Greenwell gave a short address on the palatinate of Durham, pointing out that Crayke formerly belonged to it, and prisoners were sent from Crayke to be tried at Durham. Remarks upon the castle and church were also made by Mr. W. Brown and Mr. C. C. Hodges, and many of the party ascended the tower of the castle and enjoyed a magnificent view from the top, York

Minster being visible in the dim distance. Subsequently the party drove to Sheriff Hutton and inspected the old church (where there is an effigy of the son of Richard III. and his queen), and also the ruins of the castle built by the Nevilles. The day was very fine and the party returned home much pleased with their outing.

TESSERÆ.

General Impressions in Painting.

No matter how wonderful may be the skill displayed in a work of art, if the effect ends with the pleasure produced on the eye, the result is utterly worthless. For the end of art is not to excite man's curiosity and wonder, but to satisfy the ever-yearning sympathies of the human heart; not by any means to usurp the place of nature, but to keep ever alive the impressions of its infinite variety and beauty. A proper attention to details should not be neglected, but let them ever be subservient to the higher object in view; otherwise their presence will weaken the impression sought to be conveyed by leading the mind to the observation of comparatively unimportant matters, to the great detriment of those absolutely necessary to the realisation of ideas. Take, for instance, the works of our immortal Turner, especially some of his scenes in Venice; there is not a detail in them which, if closely scrutinised, can be termed correct; and yet the impression produced is more true than if those very details had been represented with all the soulless fidelity of a photograph. The mind of man is not capable of storing every minute object which the eye in its progress may momentarily seize; but from the whole, combined and assorted, is created that image which may be termed the spirit of the scene, and which is alone worthy to be vivified by the artist. Many painters will depict the features of nature with more or less fidelity; but one shall make us feel, on viewing his ideal representation, even as he felt on looking at the real scene; and that painter is the greatest of all painters, for, in every sense, he is also a great poet.

Columns and Windows.

Although some object to the applying a small order either in columns or pilasters with a regular entablature, sometimes with the usual architrave also surrounding the aperture of the window, at others not as being inconsistent with the original purpose of columns, their impropriety is at least redeemed by richness and beauty. At all events the impropriety is not so great as that of applying small orders successively to the different storeys of a building, thereby rendering diminutive parts which, if introduced, ought to be proportioned to the entire edifice; whereas, in the case of columns to windows, they show themselves to be intended only as decorations, and though really small yet being distinct and independent features, instead of giving an air of littleness to the entire composition they rather give greater dignity and importance to the windows. As to the actual effect produced by them that depends upon the judgment and taste with which such decoration is applied. Windows of this kind are certainly not suited for any except astylar composition, since if there be also a large general order to the façade, while the columns to the windows look rather insignificant by comparison, there is too much of repetition and monotony, and the whole decoration seems to consist only of columns of different sizes. Still worse is the effect when, as is the case with the Atlas Office, Cheapside, the building consists of more than one order, because then as the windows must be large in proportion to those orders, the columns to the windows cause the others to look petty and the whole to appear both crowded and confused—a defect most strikingly exemplified in the structure alluded to, nor is it at all decreased by the windows to both the upper floors being columniated. On the contrary, Barry's two clubhouses in Pall Mall are truly beautiful examples in regard to windows thus decorated; for there they are treated in a most masterly manner and applied with the happiest effect, and so as to produce a felicitous union of sobriety and simplicity with a very high degree of decoration. Instead of being mere copies those windows are original and admirably studied compositions beautifully and even elaborately finished, whereas in the other instance just mentioned, and also in the front of the Clubhouse Chambers, Regent Street, though there are columns to the windows, there is a very sorry entablature to them—neither architrave nor frieze, but merely a plain lintel in lieu of them, without mouldings of any kind, which besides being offensively lumpish and heavy, look mean in what professes to be decoration of a superior kind. That caryatides may be substituted for columns as decorations to windows, especially where an extraordinary degree of magnificence is aimed at, follows as matter of course. Indeed hardly can figures of that kind be introduced so well in any other way into exterior architecture; and though a front might be overdone by too much of such decoration, there is little need for cautioning against excess in that respect, there being no danger whatever of its being committed.

The Warwick Monument.

Dugdale has preserved the covenant between the executors of the Countess Isabel and the artists for the erection of the monument of Richard de Beauchamp, Earl of Warwick, who died in 1439. There we find John Essex, marbler, William Austin, founder, Thomas Stevens, coppersmith, John Bourde of Corffe Castle, marbler, Bartholomew Lambspring, a Dutch goldsmith; they agree on all the particulars for the image on the tomb, and the little images and escutcheons round it. The tomb with the image still extant in polished brass of the highest preservation witnesses that the artists were excellent enough to deserve this memorial. John Pruddle, of Westminster, called simply glazier, appears to have painted the windows of the chapel, and it was particularly stipulated that "he should employ no glass of England, but with glass beyond the seas, and that in the finest wise, with the best, cleanest and strongest glasse of beyond the sea that may be had in England, and of the finest colours of blew, yellow, red, purpure, sanguine and violet, and of all other colours that shall be most necessary and best to make rich and embellish the matters, images and stories that shall be delivered and appointed by the said executors by patterns in paper, afterwards to be newly traced and pictured by another painter in rich colour at the charges of the said glazier." By all these circumstances it is plain that the executors thought that the magnificence of the intended monument must consist in the value and show of the materials rather than in any excellence of the workmanship. This covenant carries us still further and has even brought to light a history-painter of that time. John Brentwood, citizen and steyner of London, engages "to paint on the west wall of the chapel the dome of our Lord Jesus and all manner of devices and imagery thereunto belonging, of fair and sightly proportion, as the place shall serve for, with the finest colours and fine gold;" and Kristian Coleburne, another painter dwelling in London, undertakes to paint "in most fine, fairest and curious wise four images of stone, of Our Lady, St. Gabraell the angel, St. Anne and St. George; these four to be painted with the finest oil-colours, in the richest, finest and freshest clothings that may be made of fine gold, azure, of fine purpure, of fine white and other finest colours necessary, garnished, bordered and poudered in the finest and curiousest wise." This singular record contains too the prices stipulated for the several performances. The tomb was to cost 125*l.* sterling, the image 40*l.*, the gilding of the image and its appurtenances 13*l.* The glass-painter was to have 2*s.* for every foot of glass, and so for the whole 91*l.* 1*s.* 10*d.* The scripture-piece on the wall was to cost 13*l.* 6*s.* 8*d.*, and the painting of the four images 12*l.* The whole expense of the chapel and monument in St. Mary's, Warwick, which were not completed under one-and-twenty years, amounted to 2,481*l.* 3*s.* 7*d.*

The English Mile.

The old popular mile differed considerably from the modern mile. The gradual changes of this old mile must be traced out by closer investigation of antiquarian authorities than mathematicians have been wont to make, and better estimation of their relative values in a mathematical point of view than antiquaries have hitherto been capable of making. There is a tradition among antiquaries that this old mile was somewhere about a statute mile and a half. This tradition is not to be relied on, for though in all probability it agrees with the truth, yet it may have arisen from another circumstance. It is sometimes proved by the assertion that, even within the memory of man, distances were measured in the remote parts of the country by a longer than the statute mile; for instance, that York was said to be 150 miles from London, while it is really more than 199 statute miles. This is perfectly true, but the reason is perhaps different from that given, as the following account will show:—The first actual measurement of the roads in England, in statute miles, was made by John Ogilby, cosmographer to Charles II., and was published by him in 1675, under the title of "Britannia," with copious descriptions and 100 copper-plates of the roads, in a large folio volume. The instrument used was called by him a wheel-dimensurator. Various editions of this work were published. It is worth noting that this measurement, as compared with older ones, soon came into general use. Thus in a little work for men of business, called "The Complete Tradesman, or Exact Dealer's Daily Companion," London, 1684, we find a list of Ogilby's distances from town to town, compared with those formerly adopted. The latter were called by Ogilby computed miles, and the meaning of this word might be doubted, but it is proved to mean miles in common use by previous publications. Thus in Samuel Morland's "Description and Use of Two Arithmetic Instruments," &c., 1673 (or two years before Ogilby's publication), we find the distances called "computed" by Ogilby set down as the supposed real distances. D'Anville appears to have seen an edition of Ogilby in which the word computed is always contracted into com. This he supposed to mean common, and the whole of his chapter on English itinerary measures must in consequence be read cautiously, as he assumes it to be indisputable that there was a common mile in use at the Revolution which was about a quarter longer than the statute mile. But on the authority of the silence of Bernard and Greaves we must remain of a different opinion, and must suppose that the computed miles preserved by Ogilby had been intended to represent the number of statute miles, but erroneously given.

An Architectural Vase.

There is in the Etruscan Museum of the Vatican a three-handled vase which has the interest of being evidence of the treatment of architectural decoration. An undraped youth is represented in the act of ornamenting a sepulchral edifice with polychrome ornament. He is using the brush, and has not yet completed one row of palmetti. On the left a chariot is seen advancing, guided round the corner by a bearded man—to all appearances, Pluto himself. From the style of the drawing, and even from certain characteristic details of the representation, this remarkable vase belongs to the class of the national Etruscan, a circumstance which would withdraw from or at least weaken its value in testimony of the use of polychrome ornament in buildings of the best period of Grecian art, did not other much more important proofs exist in favour of this universally diffused custom.

Correspondence

[*The Editor does not hold himself responsible for opinions expressed by the writers.*]

The Royal Architectural Museum.

Sir,—For every good reason criticisms as to the present condition and future possibilities of this valuable Institution are to be welcomed, and while it has been necessary to correct some erroneous statements which have appeared of late in the public press, I am sure the Council will be quite prepared to give their best consideration to any practical suggestions tending towards the improvement and increased utility of the Royal Architectural Museum.

It would exceed my duties to anticipate in any degree the work of the Council, but I may say that in the near future after the vacation, it is hoped when the Council meetings are resumed some practical proposals may be determined on with a view of furthering this much-desired object. The purport of this letter is to solicit opinions and proposals from architects and non-subscribers on the lines indicated.

No one can have been associated with the maintenance of this great collection of Gothic art without realising the need of its development on the one hand, and the lack of interest displayed in its welfare by the majority of the profession on the other. That these conditions are essentially inimical goes without saying.

To ask, however, for monetary aid during the period when the Institution was in financial difficulties was quite hopeless, and any chance of augmenting the collection was then equally out of the question. The museum is no longer hampered by debt, and the current expenses of the school of art are more than covered by its income.

Architects and others are not invited to assist in a lifeless project, or interest themselves in a dead cause. Whatever may have been the failings and shortcomings of the Gothic revival, it would, indeed, be a sorry day for the architecture of the future should students cease to make themselves acquainted with the best work of past periods and styles, particularly with the national style of Gothic, as represented by the masterpieces of architectural art got together with so much disinterested and loving zeal by the founders of this museum, for the sole purpose of facilitating such an intimate study of old work.

To meet contemporary needs, it is clearly necessary to bring the collection more up to date and more in line with the types of design more currently in use. No doubt, had it been possible, it would have been a good thing to have supplemented the Mediæval examples with specimens of Classic work and Renaissance detail some years ago. It was not possible under the circumstances, seeing that space, money and the co-operation of architects and others were all in turn wanting, when for a good while every available effort had to be made to prevent the collection from being broken up and the premises closed entirely.

We are now free of that danger, but it must be admitted that the museum is not realising in so complete a way as it might the special intentions of its foundation. With the affiliation of the museum with the Royal Institute of British Architects and with the Architectural Association, it ought to be relatively easy to vastly enhance its utility. At least such a project might form the basis of a central university of architecture, for it remains a subject of much regret thas architects have no such premises as the Institute of Civil Engineers or the Surveyors' Institution.

To those whose professional careers were more or less inspired by the enthusiasm of the Gothic revival, it should be hardly necessary to recall the reality and thoroughness with which those who took part in that movement were animated. There is no need now to recount the history of the Gothic revival, in the origin of which the hopes of the future seemed to be centred in a rekindling of Mediævalism. The thoroughness of those days, however, must be ever associated with the aspirations and principles so ably represented by Pugin, Scott, Burges, Street and Butterfield. The best work of to-day is done by men in some degree actuated by the influence exercised by these enthusiastic workmen: for the evidence of the truth of this assertion instances scarcely need be quoted.

Drawings and plastic copies of old work may be cynically described as the dry bones of architecture, but by the very nature of things they serve as the grammar of the art, without a knowledge of which no articulate expression or individually developed work is ever likely to be produced.

Such a collection as that already to be seen at Tufton Street must consequently have its uses, at least, as an index for reference. Those who love their art and realise therefore a keen pleasure in its development will, I am persuaded, afford a helping hand in thus making the Royal Architectural Museum worthy of its aim, a credit to the profession, and as useful as comprehensiveness can make it. A building ennobled by good sculpture obtains a charm secured by no other means. The inclusion of such names as our new president, Mr. Wm. Emerson, P.R.I.B.A, and Messrs. Aston Webb, A.R.A, John Belcher, A.R.A., G. F. Bodley, A.R.A, and George Frampton, A.R.A, among the vice-presidents should be an assurance of the Council's desire to perfect the museum for the good of the greatest number and for art especially.—Yours truly,

Maurice B. Adams, Hon. Sec.

Westminster: August 20, 1900.

GENERAL.

Mr. Arthur Tooth, founder of the firm of Arthur Tooth & Sons, died on Sunday last.

The Earl of Chichester has presented to the Brighton Art Gallery two oil-paintings by Zuccarelli, and a copy of a picture by Guercino.

Mr. Bradford L. Gilbert has been elected supervising architect of the South Carolina Interstate and West Indian Exposition.

The Admiralty have expressed their willingness to contribute a sum not exceeding 5,000*l.* towards the erection of the proposed new sailors' home at Chatham. Two thousand pounds will be paid down and the balance will be given in the form of grants, which, however, will be contingent upon the condition that 1*l.* is raised by voluntary donations for every 1*l.* provided from public money. An immediate start is to be made in building the first section of the home.

Queen Elizabeth's Lodge in Epping Forest has been restored by the City Corporation to something like its original condition. It passed with Epping Forest into the hands of the Corporation. As Crown property it had been wofully neglected, and was inhabited by a family whose ancestors had been in virtual possession for considerably over a century. A considerable sum of money has been spent in removing some of the work which concealed the original attractions of the ancient place. The upper floors are used for the purpose of a museum in connection with the Essex Field Club.

The Foundation-stone of the new Roman Catholic Church in Saxe-Weimar Road, Southsea, was laid on Tuesday. The plans were prepared by the Rev. Canon Scoles, who has designed several churches. The contract is entrusted to Messrs. Goddard & Sons, of Farnham and Dorking, whose patent blocks will be used for the flooring.

Mr. Sydney C. Cockerell has objected to the introduction of a memorial of John Ruskin in Westminster Abbey on the ground that it would be one of "the incoherent fillings" to which the writer objected. For Ruskin, or for the Duke of Westminster, Mr. Cockerell says:—"It would be difficult to suggest a more appropriate memorial to either of these men than the purchase of a beautiful cliff or hill-top which should be connected with their names for ever, secure against the encroachments of the jerry-builder."

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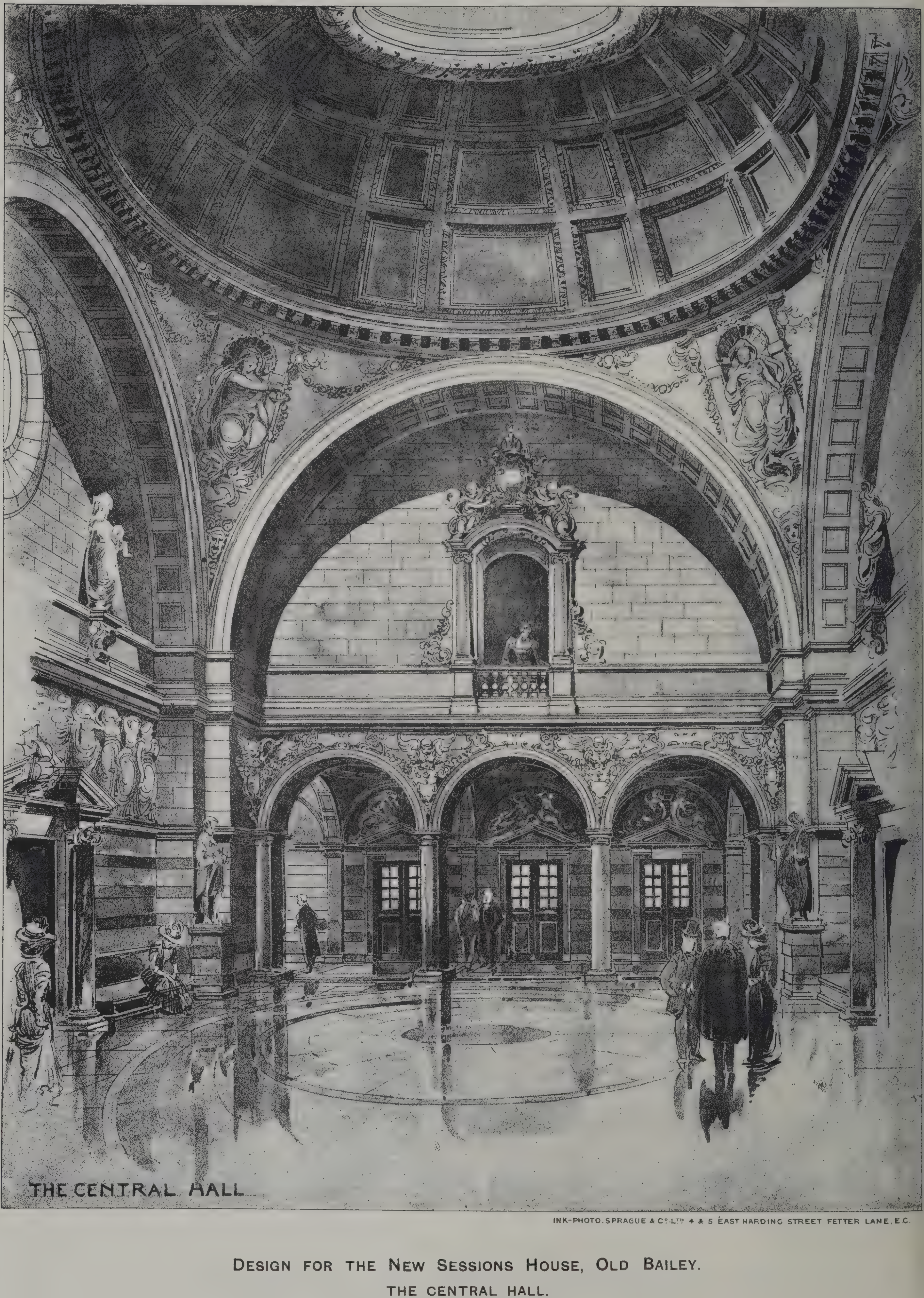
THE CENTRAL. HALL.

INK-PHOTO. SPRAGUE & Co. LTD 4 & 5 EAST HARDING STREET FETTER LANE, E.C.

DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY.

THE CENTRAL HALL.

By H. T. HARE, F.R.I.B.A.

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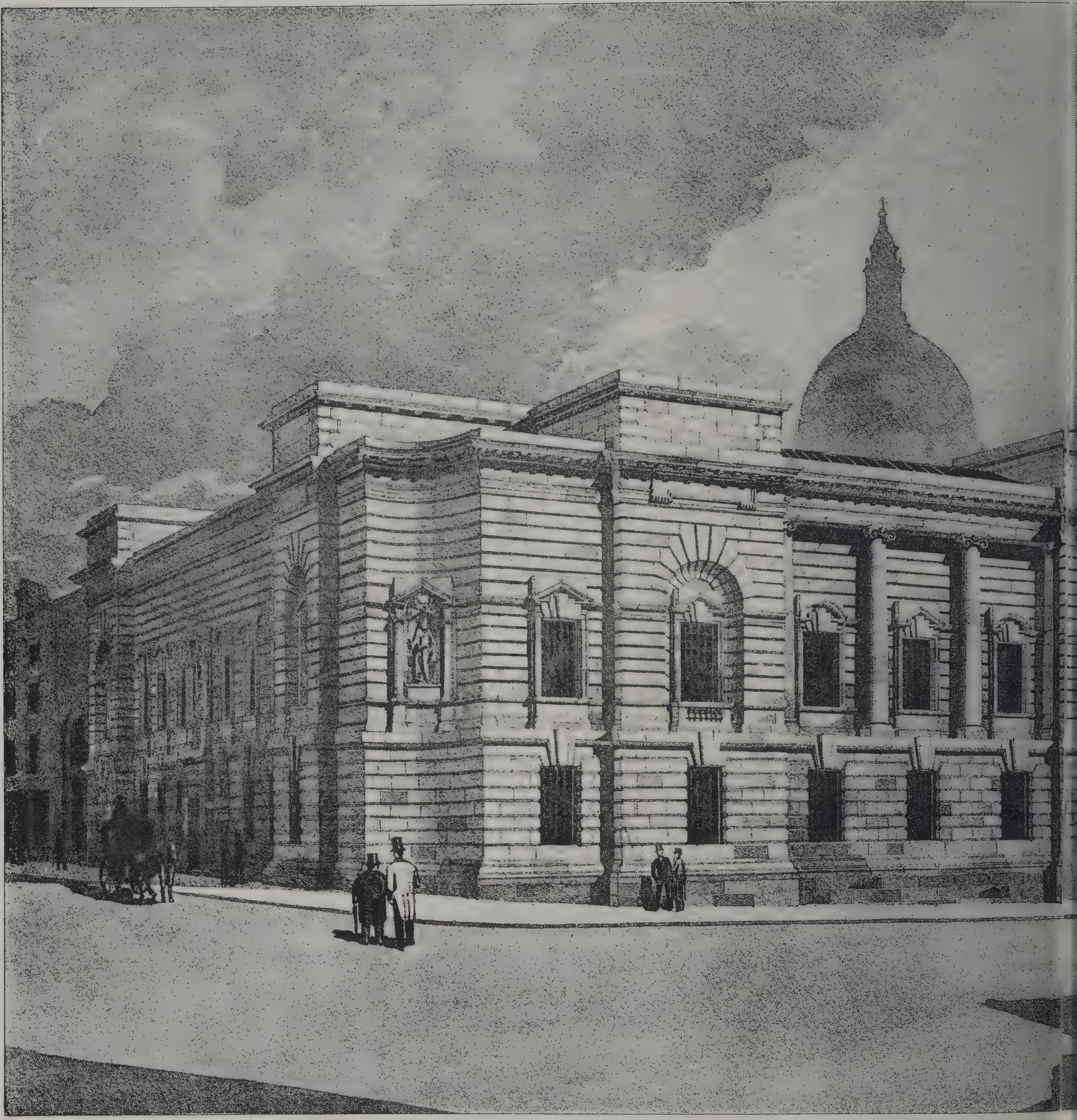

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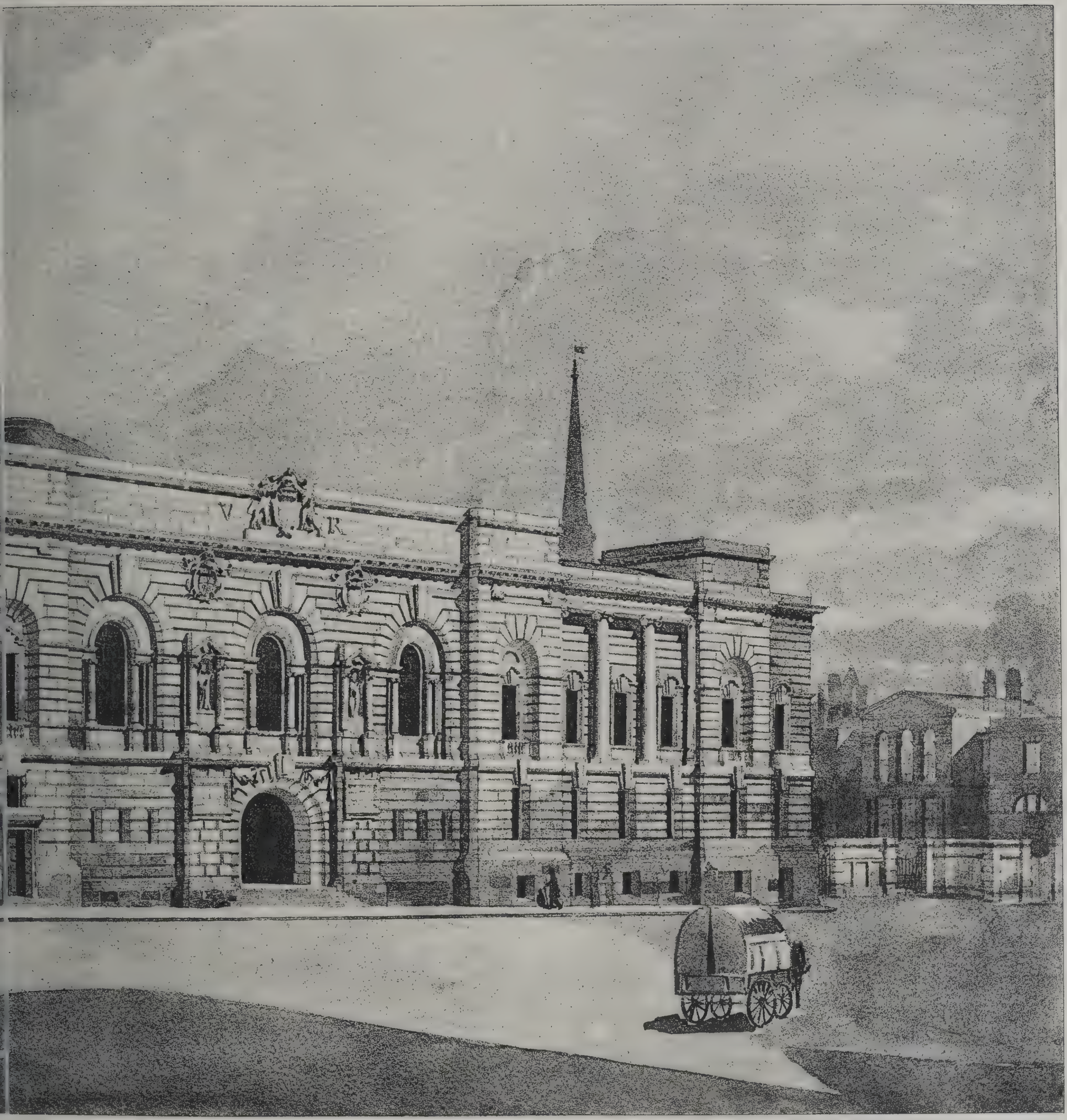

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SONS HOUSE, OLD BAILEY.

E VIEW.

F.R.I.B.A.

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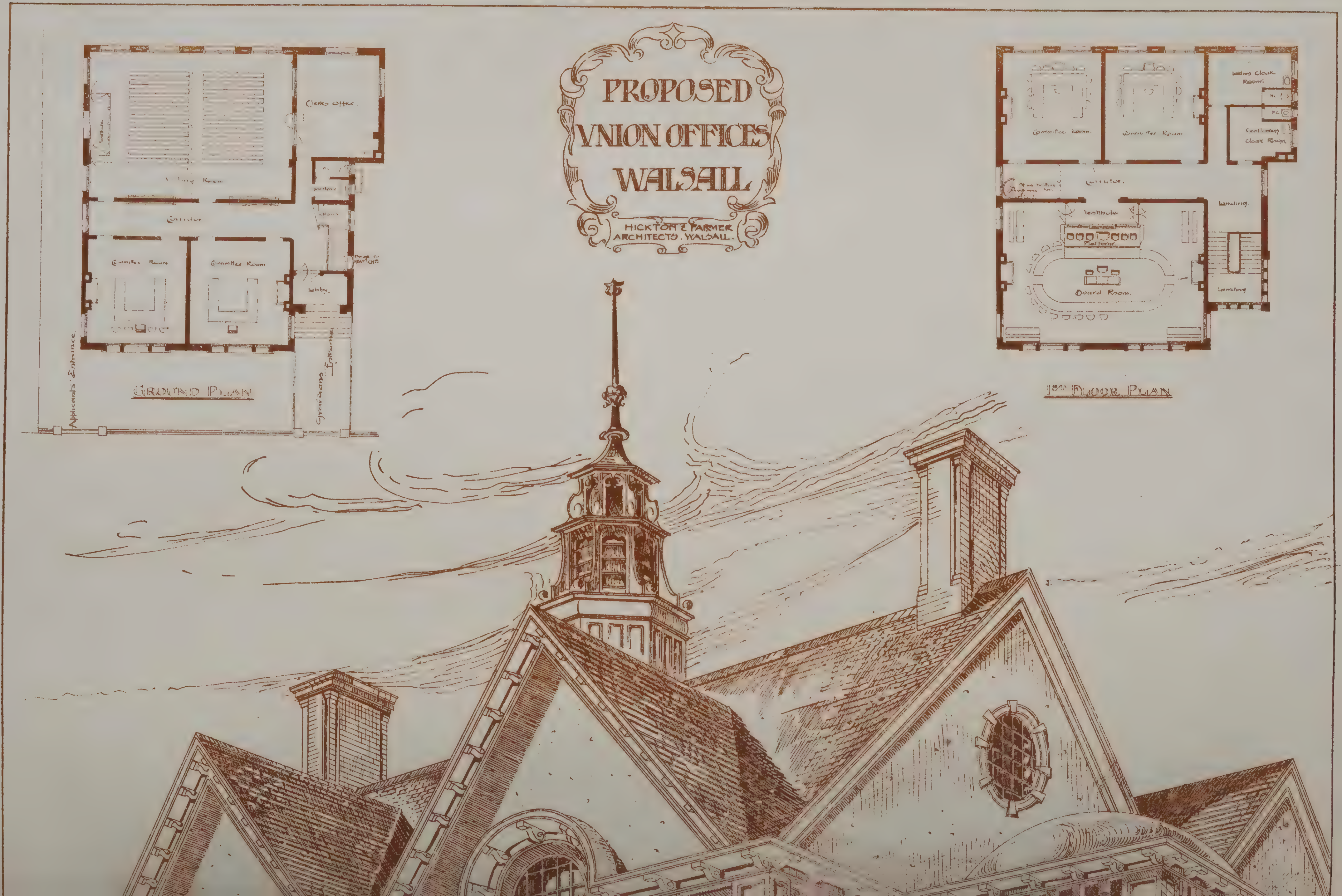
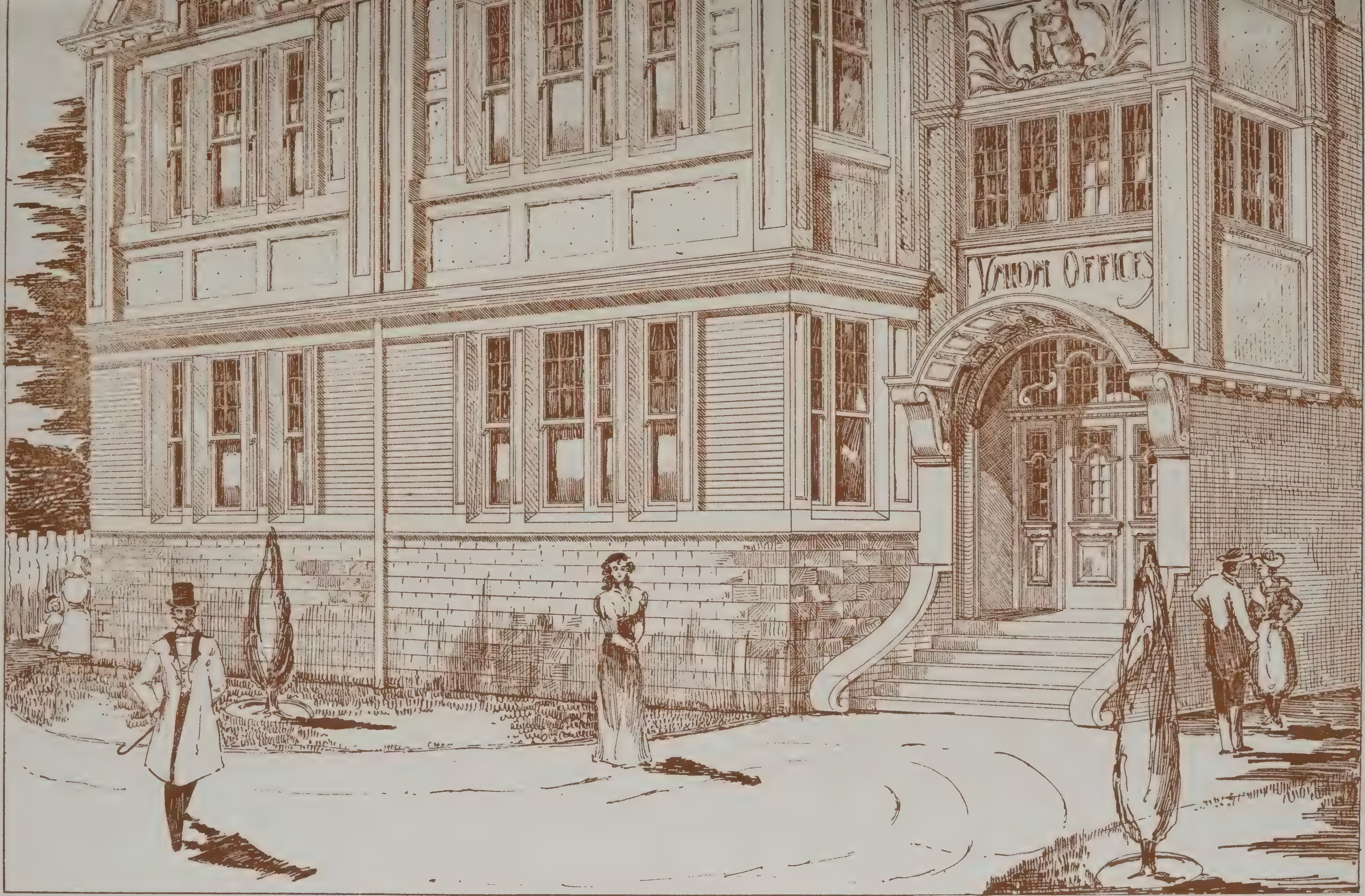

PROPOSED
UNION OFFICES
WALSALL
HICKTON & FARMER
ARCHITECTS . WALSALL .
Clerks Office.
Relief Room
Vestibule
Corridor
Committee Room
Committee Room
Lobby.
Passage to Heating Chamber
Applicants' Entrance
Guardians' Entrance
GROUND PLAN
Committee Room.
Committee Room
Ladies Cloak Room.
W.C.
W.C.
Gentlemen's Cloak Room.
Corridor.
Landing.
Vestibule
Platform.
Board Room.
Landing
1st FLOOR PLAN



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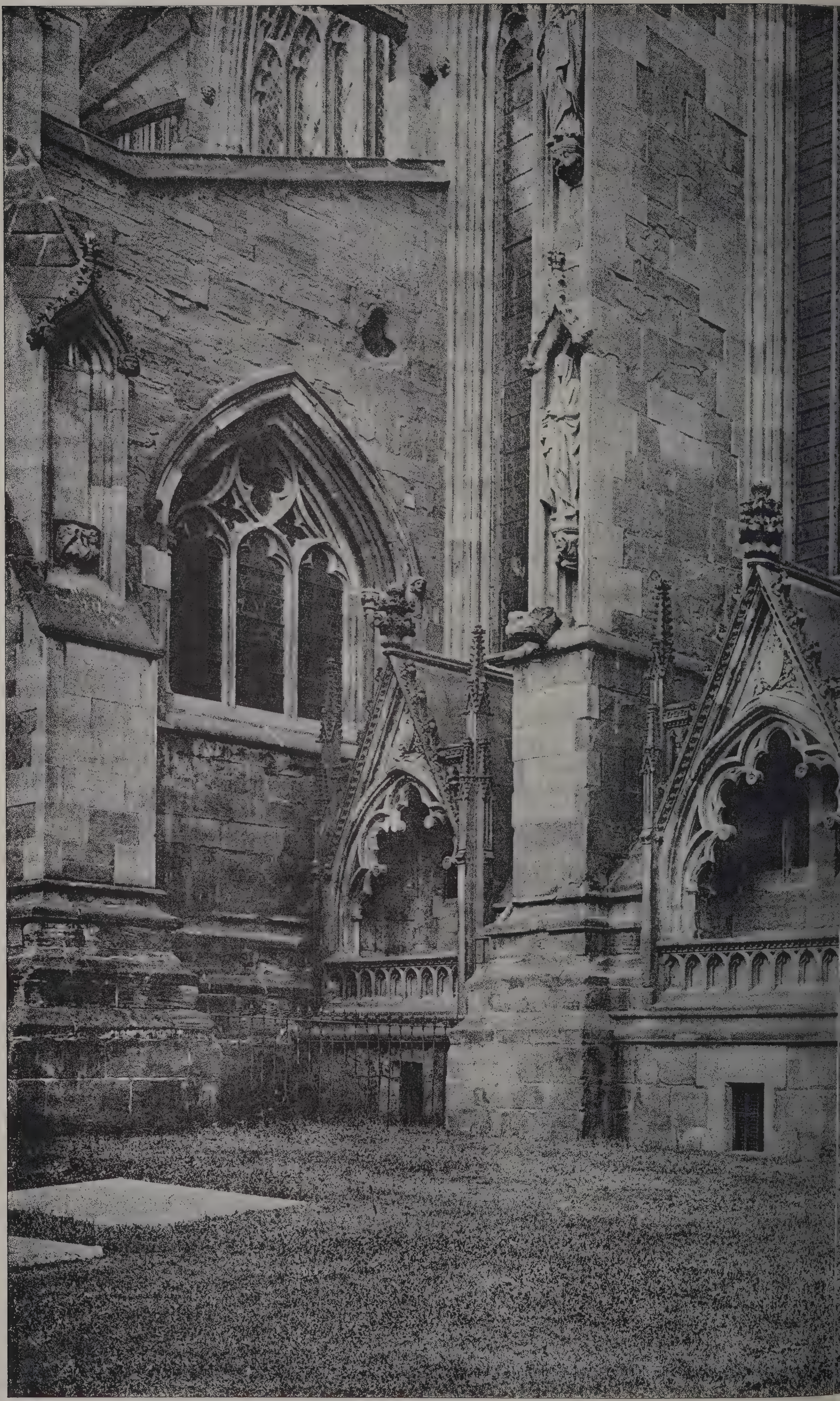
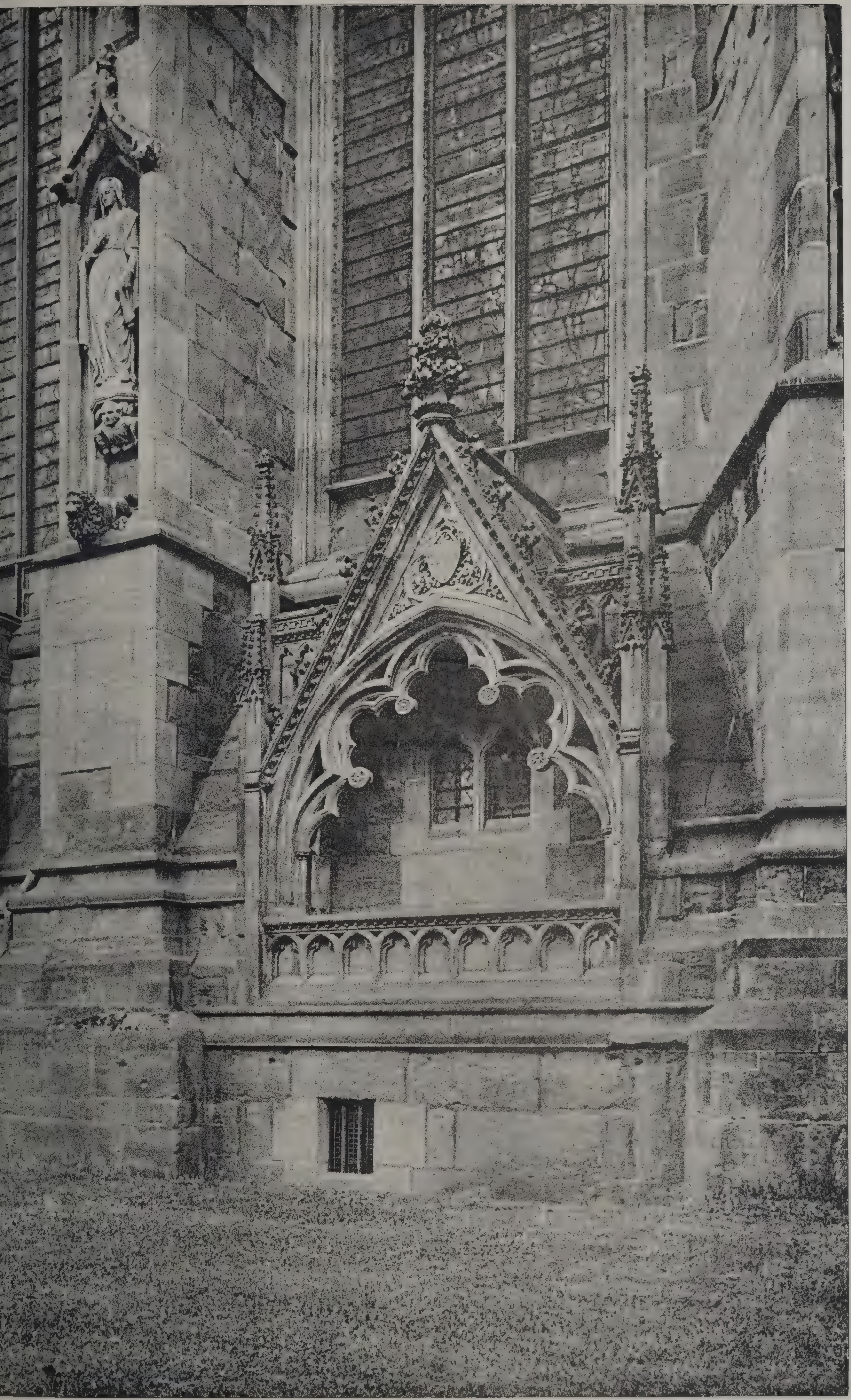


CATHEDRAL SERIES, NO. 292.—LICHFIELD: A



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Lady Chapel, showing Arched Recesses.

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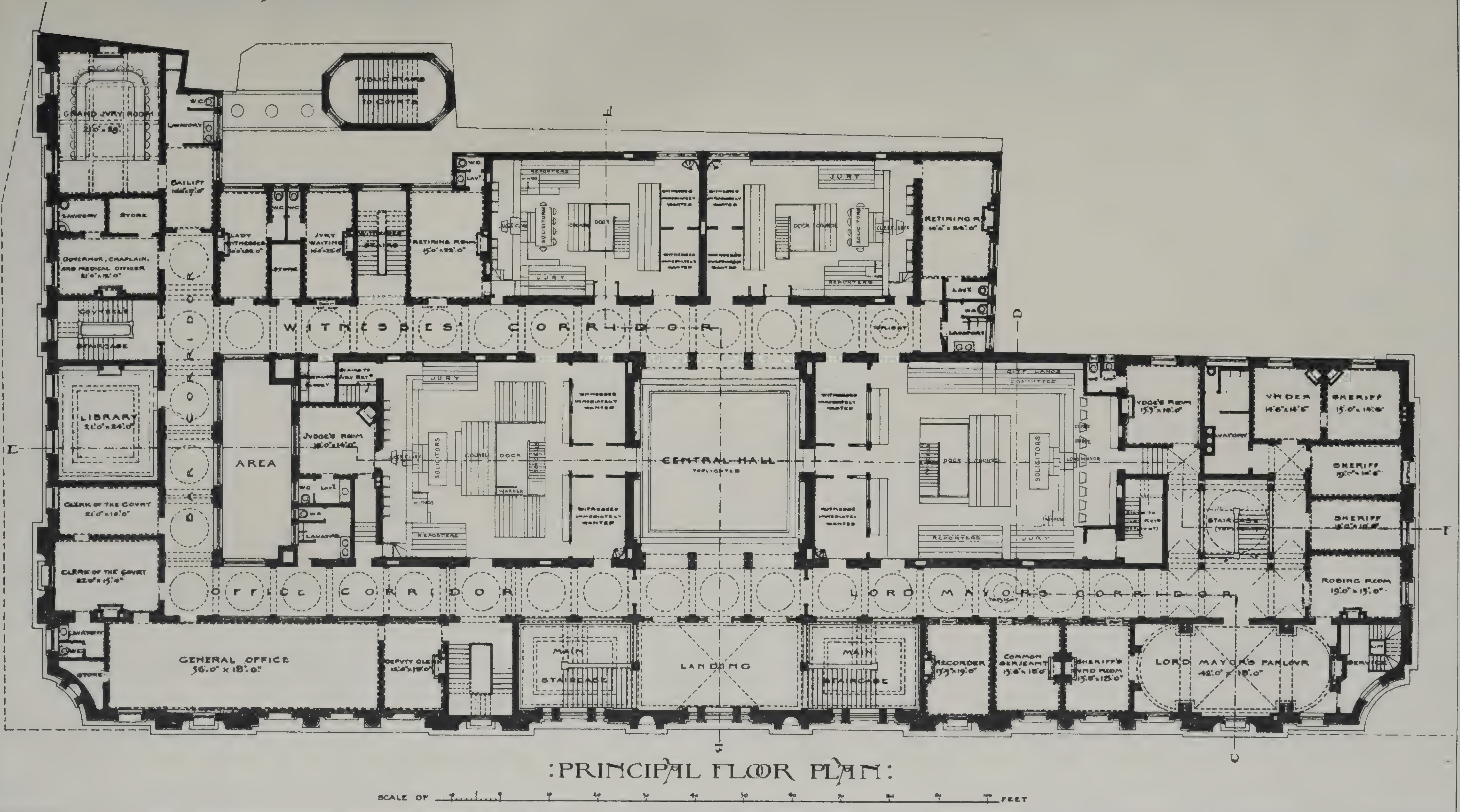
:NEW SESSIONS HOUSE:
:OLD BAILEY E·C·



:PRINCIPAL FLOOR PLAN:

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DESIGN FOR THE NEW SESSIONS HOUSE, OLD BAILEY.

By H. T. HARE, F.R.I.B.A.

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The Architect.

THE WEEK.

The members of the Horsham Museum Society visited Petworth House last week, but they had to comply with regulations which are in force for ordinary visitors, and were only admitted in limited numbers at a time. The house, the town and the surrounding country are each well worth seeing. William Cobbett, who was familiar with several parts of England, declared that for landscape beauty no part of the island was comparable with Petworth. Turner spent some happy days there when executing a commission from Lord Leconfield, and the pictures which were then produced were lately exhibited at the Royal Academy. There are some fine examples of ancient sculpture in the Petworth collection of which the genuineness cannot be doubted, with portraits by Holbein and Vandyke. What are generally the most admired of all are the architectural carvings by Grinling Gibbons. Mr. J. L. André, F.S.A., read a paper on the owners of the property. After the Conquest Petworth, together with a large part of Sussex, fell to the share of Roger of Montgomery, who commanded the French mercenaries at Hastings. But his son lost it by rebellion, and it was given by Henry I. to his wife Atheliza. She made it over to her brother Josceline, who married the heiress of William de Perce. The Percies held it for many generations. Then, after the death of the tenth earl, Elizabeth Percy became owner, and on her death she was succeeded by her daughter Catherine, who married Sir William Wyndham, whose son became Earl of Egremont in 1746. It will thus be seen that one of the greatest estates in England has during 800 years remained in the possession of two families, the Percies and the Wyndhams, a circumstance that is remarkable.

Michelet, the historian, prized Strasburg Cathedral above most others because of the infinite variety of history of which it appeared to him to be the exponent. In it he said he could witness political and ecclesiastical tragedies, prince bishops who represented the church militant by slaughtering men, the Old Law and the New Law carrying on dialogues, and the Byzantine and Germanic spirits displaying themselves on equal terms. At times the whole church became musical to him; the angels on the pillars sounded their trumpets, and the little figures on the south side united their voices with those of the majestic figures in the north windows. It was, he said, music which was at once architectural, regular and prismatic. All this may be over-sentimental to those who are not acquainted with the great cathedral. But the strange emotions which are excited in the minds of students who attempt to master its mystery cannot be satisfactorily expressed in precise words. The language of a specification completely fails when we attempt to analyse the elements of the power by which the visitor is more impressed the longer he remains within the building. The diversity of styles is, however, one of the causes of so much wonder. During one-half the Christian era many artists have contributed the different parts. In the restoration which is now in progress, or will be undertaken, there is an apprehension that the peculiar quality of the building will have no recognition If the cathedral is declared to be purely and simply Gothic, then it would be correct to have all the new works faithfully carried out in that style. But the effect obtained would not correspond with that produced by the building as we find it. At present it is a history in stone, a concert, as it were, in which several ages take part. But in the restoration there is no harmony, for one class of melody is allowed to have a proportion that is in excess. To remove, therefore, the later Gothic and the early Renaissance work will undoubtedly leave a form of structure which will be acceptable to architectural logicians. But feeling is as powerful as understanding with the Germans, and they are now becoming alarmed that what is new will only destroy myriads of associations which have bound Strasburg Minster with the soul of the Fatherland.

The ancient evils arising from the absence of main drainage in Dublin will shortly be remedied. On Tuesday the foundation-stone of the outfall works was laid by the Lady Mayoress. The site selected is near the Pigeon House Fort, which was erected at the mouth of the Liffey for the defence of the city in case of invasion. Of late years the fort has been used mainly as a depôt for stores and as barracks for recruits, who practised at the neighbouring rifle ranges. Mr. George Chatterton, C.E., considered the place was well adapted as a site for outfall works. The Government, however, raised obstacles against the introduction of the openings in such a position, and it was necessary to pay the War Department 65,000*l.* for the property, which has an area of nearly sixty acres. The existing harbour of the fort contains about ten acres, of which eight are to be reclaimed by a sea wall, and two at the east end are to be retained for the berthage of vessels used in connection with the scheme. On the area reclaimed eighteen precipitation tanks are to be constructed, with culverts, channels and tanks. Almost all the work is below the level of high-water mark of ordinary spring tides, and a very large proportion of it is below low-water mark, and, consequently, the operations are of no light character. Messrs. S. Pearson & Son, Limited, have undertaken the contract for 94,000*l.* The walls, tanks and other permanent works are to be constructed entirely of Portland cement concrete, and probably 50,000 cubic yards of this material will be required. It is claimed for the Dublin outfall works that they have been designed on a sounder and a much more liberal basis than those at Barking and Crossness. The contract for the intercepting sewers, which will be about eight miles in length, is in the hands of Messrs. J. & J. Martin.

According to Mr. René Bache, the United States Capitol in Washington has had a curious history. When George Washington and three commissioners were instructed to see to the erection of a suitable public building for a legislative hall at the national capital, an advertisement for designs was published, specifying that the structure was to be of brick, with a conference room and a room for the representatives, each to accommodate 300 persons, with a lobby, a Senate room of 1,200 square feet of area, a lobby, and twelve small rooms for committees and clerks. A prize of 500 dols. and a building lot were offered for the best plan, and the winner was William Thornton, of Philadelphia. He was not an architect, and so his idea was turned over to Stephen Hallette, of the same city, who was appointed architect. The work of construction was begun in 1795, and history relates that Andrew Ellicott got 5 dols. a day and expenses for marking out the foundations, by the aid of astronomical instruments, so that the building would face exactly to the east. In 1800 the rooms now occupied by the Supreme Court and the law library were fitted up for the use of the Senate and House of Representatives. By 1811 the building of the dome was ready to be begun when work was stopped by the war with Great Britain. At that time the Capitol consisted of two detached fragments standing far apart, a long wooden shed providing a covered alleyway from one to the other. This space was to be occupied by the dome. Finding the structure thus incomplete, the British thought they would wipe it out entirely, and so piled a quantity of wood inside of it and applied the torch. The damage done was not very great, fortunately, and restoration was easily accomplished. The freestone pillars in the Chamber of the House, now Statuary Hall, were much injured, and were replaced with the pillars which now stand there, composed of a curious conglomerate marble from Maryland. The cost of rebuilding the portion destroyed by the British was 700,000 dols. By 1827 the structure was completed, with its rotunda and original dome, and there was no further change of importance until forty-nine years ago, when it became apparent that more room was necessary, and the two great wings were proposed. This alteration was promptly begun, and in 1855 the old dome was removed, work on the new one being carried on throughout the four years of the Civil War. In 1861 the wings were completed, and two years later the figure of *Freedom* was placed in position on the top of the dome

GIOVANNI LORENZO BERNINI.

WHEN WREN wrote from Paris and said, "BERNINI'S design for the Louvre I would have given my skin for," was the admiration evidence of good taste in the English architect? "The old, reserved Italian," he continued, "gave me but a few minutes' view. I had only time to copy it in my fancy and memory." WREN had departed from England because the Plague had interrupted his building projects. His intention was to travel in Italy in order to study those architectural works of which his own knowledge was insufficient; but he found so much that was attractive in Paris, he resolved to stay there. He expressed the hope that he should "bring away all France upon paper," and he applied himself with so much assiduity to measuring and drawing, he must have puzzled the Frenchmen. BERNINI was not accustomed to equal ardour on the part of a stranger, and was cautious in explaining his plans.

The year 1665, when the two men met, was a time which was well adapted to serve the purpose of an enthusiastic student of architecture in Paris, for a competition was on the tapis which was supposed to possess interest for all the world. An architectural struggle was in progress in which not only æsthetic principles were involved, but the no less important one of national independence in art. The contest resembled that in which theologians were at the same time engaged under the name of Gallicanism, although the issue involved related only to the character which was to be imparted to the new part of the Louvre. BERNINI was the representative of Roman power, and unconsciously WREN, by his admiration of the Italian's design, became a supporter of Ultramontanism in art. BERNINI failed, and that was an advantage for Western Europe, although it has to be admitted that WREN was mistaken, and would have "given his skin" for what was not worth any sacrifice.

BERNINI at the time was in his sixty-eighth year, and he was recognised as the foremost artist in architecture, as well as in sculpture, to be found in Europe. He was a Neapolitan by birth, although his father was a Florentine painter and sculptor. He could be classed with the infant phenomena, for in his eighth year he modelled the head of a faun which astonished amateurs. He was brought to Rome, and was allowed to live in the Vatican surrounded by the masterpieces of painting and sculpture. It was supposed he would surpass MICHEL ANGELO, and patrons contested to have the privilege of aiding him. Cardinal MAFFEO BARBERINI became his protector, and procured for him the favour of PAUL V. When in his fifteenth year he produced a life-sized statue, *St. Lawrence*, and a group of *Æneas carrying Anchises*, he was recognised as the master sculptor of the age. He next produced a group of *David and Goliath*, and it was generally understood that the Hebrew shepherd was a portrait of himself. He considered it to be one of his best works, although he spent but six months upon it. Forty years after its completion he declared that he had made little progress since he had undertaken it, and the words were more expressive of regret than of pride in his youthful strength. He was not eighteen when he cut from a single block the group of *Apollo and Daphne*, which many judges still consider to be his most characteristic work. It is a marvellous product of manipulation, for we seem to witness the metamorphosis of the girl into the tree; but it was the forerunner of a series of works in which the old repose of sculpture was treated as a negligible quality. In 1623 his patron, Cardinal MAFFEO, was elected Pope under the name of URBAN VIII., and a boundless field was opened for BERNINI'S activity. He was charged with the decoration of the part of St. Peter's known as the Confessional. The work of a Pope's favourite was certain to be eulogised in spite of defects. But BERNINI was far from satisfied with what he had done in St. Peter's; he often lamented the expedition under which he was compelled to labour, and which did not allow him to give sufficient preliminary study in order to discover the class of composition which would be most effective in the position assigned for decoration. In fact, most of the sculpture was produced at hazard, and BERNINI was disappointed when he saw it in position. As soon as he ascends the throne a Pope is expected to think of his end, and a commission for his mausoleum is therefore awaited. There were no rivals to BERNINI, and he was able to follow his own fancy in the immense work where URBAN is represented in bronze, with Charity and Justice (figures which RUBENS might have designed) lamenting his loss, while Death with his scythe inscribes the Pontiff's name and titles in a register.

The fame of so great an artist could not be confined to Rome, and LOUIS XIII. accordingly invited BERNINI to Paris, offering him, as if he were a second DA VINCI, a pension of 12,000 crowns; but the Pope was not disposed to allow of the departure of an artist who could immortalise his pontificate. It was not until 1665 that LOUIS XIV., more fortunate than his father, was able to obtain the artist's co-operation. It was supposed there was a necessity which made the journey imperative. LOUIS XIV. by the death of MAZARIN had ceased to be a nominal monarch, and one of his early resolves was to complete the Louvre. In order that there might be no obstacle through an insufficiency of materials or workmen, building by private individuals in Paris was made criminal unless a special sanction was obtained. LE MERCIER had been directing the works, but he had just died in poverty. The buildings were continued under LE VAU. Then a fire arose, and for awhile the works were suspended. When they were resumed LE VAU urged them on with extraordinary haste, as if he were afraid of losing his commission. He had indeed reason to dread that eventuality. In 1664 COLBERT was appointed superintendent of buildings. Although an official who had risen from the lower grades his views were grand. His dominant idea would appear to be the absolute necessity of magnificent architecture for any kingdom which aspired to pre-eminence. The plans which LE VAU had prepared and partly executed were too insignificant for the palace of such a king as COLBERT aspired to make of LOUIS XIV. He therefore stopped the works.

His next step was to invite the architects of Paris to send in designs for the completion of the Louvre and the connection of it with the Tuileries. It was the first experiment of the kind which had been attempted in France. In order to give a more definite notion of the problem, COLBERT ordered that a model in wood of LE VAU'S design should be prepared, and the architects were asked when submitting designs to append to them a criticism of its defects. It is needless to say all the competitors came to the conclusion that LE VAU'S building, and especially the façade, was altogether unworthy of the purpose. There was an end therefore to LE VAU'S prospects. But the critics did not prove themselves competent to take his place. All the designs by the architects were considered unsatisfactory by COLBERT. The only design which appeared to him to be worthy of any notice was one by CLAUDE PERRAULT, a physician who had been flagellated by the satire of BOILEAU. PERRAULT, however, possessed a friend in court, for his brother CHARLES was chief clerk to COLBERT.

As soon as the preference of COLBERT was known a dispute arose. BOILEAU maintained the inability of CLAUDE PERRAULT to design, and said the drawing must have been the work of LE VAU or some other architect. CHARLES PERRAULT also claimed to have had some share in it, although he wished the whole of the credit should go to his brother. COLBERT found himself in a difficulty, and it would appear he had misgivings as to whether he was not over-precipitate in condemning LE VAU'S work. The competition from which he expected so much did not have a satisfactory result. Although he was ambitious, he was just, and he therefore determined to send LE VAU'S model to NICOLAS POUSSIN, who was the greatest French painter of that age, and about whose probity there was no question. He was asked to submit it to the judgment of the ablest Italian masters, and to obtain reports from them about its value. It is remarkable that Dr. PERRAULT was afraid to submit his design to the tribunal. POUSSIN performed his office in the way expected from so honourable a man. The Italian architects appeared, however, to have taken their cue from the French competitors, and the unlucky model of LE VAU was covered with reproaches. In arriving at the judgment the opinion of BERNINI was omnipotent. Designs were sent by some of the Italians, but they all appeared to be as ineligible as those prepared by the architects of Paris.

Colbert's dissatisfaction was increased, and as a self-reliant man he regretted he had not carried out the plan which he had admired, of which Dr. Perrault was the author. Charles Perrault naturally took advantage of the opportunity to extol his brother's work. But in Rome a new influence arose. The Cardinal Chigi, who was afterwards Pope, recommended that Bernini should be employed, and the architect who had executed the colonnade of St. Peter's, the great baldachino, the staircase to the Vatican, and many other works in Rome and in various cities of Italy, ought to be competent to prepare designs for the completion of a French palace. If compared with an amateur like Perrault the supremacy of Bernini appeared more marked. Colbert was anxious to obtain the most satisfactory result, and although his amour-propre was at stake, he agreed to put the works in the hands of Bernini. The king approved, and the arrangements were entrusted to the Duke of Crequi, the ambassador of France at Rome.

It was no easy enterprise to undertake. Bernini was old and disliked travelling to a city which seemed to him to be in a remote region. In Rome he was the representative of the arts, and as such was the greatest notability outside the Papal circle. He had formerly rejected the offer of a pension of nearly 3,000*l.* a year which came from Mazarin, and money had become less necessary to him. The French ambassador, recognising all the difficulties, approached Bernini as if he were a king, and presented to him the invitation of Louis XIV. with all the ceremonial which diplomacy dictated for State affairs. His journey was to resemble a royal progress, and no effort was to be spared in Paris to uphold the dignity of the greatest of artists. Bernini at length condescended to agree to the proposals, and as the Pope raised no objection to his departure, he set out for Paris. On his way through Italy and France he was welcomed as if he were a conqueror who had saved Europe from barbarians. In all the cities he passed through the princes and authorities received him, and he was accompanied by attendants along the road until he was met by those of the next territory or city. There was so much jubilation, the ceremonies seemed to be factitious. When he entered France officers of the royal household were in waiting, whose duty it was to watch over him and to insure that nothing was neglected which would add to his comfort. When he reached Paris a mansion was ready for him which was furnished with whatever was best in the royal treasuries. He was received by Louis XIV. on June 4, 1665, at St. Germain, and was assigned an allowance of 3,000 louis d'or.

Bernini was not tempted by the luxury which surrounded him to neglect the duty which brought him to Paris. His first step was to have the plans and levels which had been sent to him verified by one of his assistants. Mathias de Rossi, who had charge of the task, discovered a great many errors in them. In such a case it is difficult to be silent, and the remarks of the Italian surveyor about the incapacity of French architects increased the enmity which always arose at the introduction of a foreigner. Bernini was not long in finding that his reputation was no protection against the attacks of those who looked on him as an interloper. But he resolved to put all his strength into the struggle. He prepared a design at once, of which a model was made in high relief. Colbert, who had anticipated something extraordinary after such a long and costly preparation, could not conceal his disappointment. But as an economist it was difficult for him to reject a plan which had involved France in so much expense. He therefore decided that the parts which Le Vau had erected should be demolished, and that Bernini's buildings should be erected.

Then vexatious difficulties were encountered by Bernini. He had to employ materials without having any experience of them. He endeavoured to overcome his ignorance by making experiments. But without delicate appliances satisfactory results in such cases are not to be obtained. Bernini's conclusions were evidently erroneous, for his trial vaults were insufficient, and succumbed under the weights which were placed on them. The architects of Paris did not conceal their gratification. Profiting by his failures, greater solidity was given to the masonry by Bernini, and in order to avoid risks the work was carried out slowly. Louis XIV., who, like so many potentates, believed that buildings could be raised with the expedition seen in war, was annoyed when he realised how long would be the period which must elapse before he could see his palace in a condition to receive him. In one sense Bernini's design was too magnificent, and in another it was too inferior. One of the courts was to contain a colossal statue of the king, supported by a mass of masonry 100 feet high. Around it were to be a great many fountains, which were to serve as reservoirs for the water supply of Paris. In the interior of the building was a succession of halls which would suit assemblies, but the offices and living rooms seemed to have had little consideration, and were to be constructed in any spaces which might be left from more important parts. From what is shown by Blondel there can be no question of the magnificence of Bernini's plans, but his buildings were not adapted to a country like France, where the light, heat and other climatic conditions differ from what can be found in Italy or Greece. The question then became, Was convenience to be sacrificed to form, or was form to be secondary to convenience?

What was to be done? To Frenchmen, with their long and unbroken traditions of art, it seemed like an insult to civilisation to take the commission out of the hands of Bernini and to dismiss him. Louis XIV. was despotic and Colbert was strong-willed, but they could not summon enough resolution to deal with the emergency. Fortunately for them Bernini had grown tired of Paris; he could not adapt himself to the new conditions of life, and he heard Rome constantly appealing to him to return. He therefore applied to the king for permission to leave Paris. Although his desire gave satisfaction, care was taken to make it appear that his departure would be a loss to France. Colbert insured there should be no financial difficulties. A gift of 3,000 louis was offered to Bernini for travelling expenses, a pension of 12,000 francs was promised, and his principal assistant, Mathias de Rossi, was also rewarded.

Bernini having vanished, the plans for which Wren was willing to give his skin were set aside. All the masonry which had been executed to realise them was taken down. For a time some of the former competitors believed they were likely to be called on, but as further delays were considered impolitic it was decided to fall back on Perrault's design, which from the first had found favour in the eyes of Colbert. Bernini's walls having been cleared away, on October 17, 1665, Louis XIV. was able to lay the foundation-stone of the new buildings. It is remarkable, but characteristic, that in the inscription there was no mention of any designer, for it ran as follows:—"Louis XIV., King of France and Navarre, after having conquered his enemies, given peace to Europe and consoled his people, resolved to complete the royal building of the Louvre commenced by Francis I. and continued by succeeding kings. During some time he had the same plan continued, but having conceived a grander and more magnificent design, he has here laid the foundation of the superb edifice, Jean Baptist Colbert, Secretary of State and Treasurer to His Majesty, being then superintendent of buildings." We need not follow the progress of the works of the Louvre. A great part of it as now seen is of later construction, but Perrault's colonnade still receives commendation from architects, although it is the work of an amateur.

As for Bernini, he never felt any sentiment but admiration for Louis XIV. after his return to Rome. While he was in Paris he executed a bust of the king without the aid of a model, and having only a few sketches to guide him. In Rome he produced an equestrian statue of the king from one block of marble. But it was more remarkable for its size and the difficulty of its execution than from its beauty or spirit. Louis was not flattered by the gift. He ordered Girardon, the French sculptor, to alter the features and to represent flames arising from the ground under the feet of the horse, in order that it might be taken as the representation of the self-sacrifice of Curtius rather than a portrait statue. It would take long to describe all the works Bernini executed in the fifteen years which elapsed between his return to Rome and his death in his eighty-second year. When his hand grew too weak to cut marble he turned to painting, and it was found that he had finished about one hundred and fifty pictures.

Bernini was so familiar with working in stone from his infancy, it seemed to him to be a pliable material, and both in his buildings and his statues he carried execution to extravagance. He wished to suggest motion in sculpture, and as a means towards that end his draperies look as if they were fluttering in the wind. He never realised that marble was not a textile substance. He once remonstrated with MOCCHI about that sculptor's drapery of the *St. Veronica* in St. Peter's, and the reply was that the effect was caused by the breaches in the great dome, which were the consequence of the construction of the staircase to the Vatican by BERNINI; or, in other words, there was more excuse for the censured than for the censor. He evidently considered that whatever was possible with a pencil could be imitated in marble, and although BERNINI's draperies have great amplitude, yet they do not inspire the repose which a similar treatment would express on canvas. His floating robes have a fussy and uncomfortable aspect, and we soon grow tired of them. His amazing dexterity led him astray, and it must be confessed there are no works of sculpture which are less expressive of the spirit of the art. His architecture also displays an excess of license, and his baldachino in St. Peter's, although one of the costliest works in existence, can only be considered as a huge concetto which is disfigured by details that are repulsive. WREN's admiration of him was not justified, and may have caused some of the shortcomings in the churches afterwards erected in London.

GOTHIC VAULTING.

AT the beginning of the nineteenth century there was a great diversity of opinion about the origin of Gothic. Mediæval styles were not in much favour, and it was possible to perpetrate many absurdities in building, and to induce people to believe they were according to ancient precedents. Builders or carpenters who produced many of those extravagances might not go so far as BATTY LANGLEY and believe that five orders could be invented for Gothic as well as for Classic, but they had a notion that a modern designer was sure to come nearer his Gothic predecessors if he paid no attention to ancient examples and allowed his imagination full sway. The numerous sources which were discovered for Gothic were enough to compel a practical man to believe that the style must have had a manifold origin, and could not be free from incongruity. WREN, whose authority was imposing, maintained Gothic to be derived from the Saracens, and brought to Western Europe by the Crusaders. There were other authorities who were in favour of a Moorish origin. Bishop WARBURTON fancied that groves of trees suggested the long-drawn aisles of the churches, and the intermingling of branches from trees on the two sides of an opening was the prototype of groined roofs. That fancy has been repeatedly reintroduced as original in modern times. The American EMERSON, who was not unaware of the results of modern investigations, becomes as dogmatic as the English bishop, for he says in a passage where the expression almost condones the errors :—

> The Gothic church plainly originated in a rude adaptation of the forest trees, with all their boughs, to a festal or solemn arcade, as the bands about the cleft pillars still indicate the green withes that tied them. No one can walk in a road cut through pine woods without being struck with the architectural appearance of the grove, especially in winter, when the bareness of all other trees show the low arch of the Saxons. In the woods, in a winter afternoon, one will see as readily the origin of the stained-glass windows with which the Gothic cathedrals are adorned, in the colours of the western sky seen through the bare and crossing branches of the forest. Nor can any lover of nature enter the old piles of Oxford and the English cathedrals without feeling that the forest overpowered the mind of the builder, and that his chisel, his saw and plane still reproduced its ferns, its spikes of flowers, its locust, elm, oak, pine, fir and spruce.

The paragraph is pleasing to read, but EMERSON should have known that the Mediævalists were as little disposed as the ancient Greeks to utilise nature on a grand scale as a pattern for their buildings. There is no doubt that plants and flowers were employed as models for ornament by the sculptors, but the designers of the buildings sought elsewhere for the arching. At a later time CHARLES KINGSLEY imitated EMERSON in announcing the vista theory as if it were a discovery of his own, and the only effect of his words was to persuade EDMUND SHARPE to join the ranks of his enemies. KINGSLEY was imaginative, but he was without any logical power, and it is to be regretted he did not confine himself to romances. The greatest of all our romancers, however, Sir WALTER SCOTT, who undoubtedly did more than any man of his time to popularise Gothic, with a simplicity that was delightful proclaimed that Melrose Abbey and the other magnificent abbeys and churches he described were all derived from the intertwining of osiers by basket-makers, and of wattles and willows by hedge-builders. He announced his adherence to the views expressed in a paper by Sir JAMES HALL that was read before the Royal Society of Edinburgh in 1798, in which it was shown that the Gothic arch was suggested by willow wands that were bent towards each other, and the ornamentation was derived from the same source. HALL was an able man, and his geological experiments are still cited with respect; but he was led by a will-o'-the-wisp when he went to the woods to find the prototype of what was most characteristic in Mediæval architecture.

It is interesting to learn that at a time when such novel sources were found for Gothic architecture, a London architect, GEORGE SAUNDERS, who lived in Oxford Street, had the courage to come forward and to propose the principle of evolution, although the word was not then in use, to explain not only the progress of the art, but the characteristics which differentiated it from the Classic styles. In 1810 he wrote an essay entitled "Observations on the Origin of Gothic Architecture," which undoubtedly is entitled to a place in any history of opinion about architectural art in this country.

SAUNDERS wisely recognised that the important question in all styles of architecture is the construction of the roof. "In general," he said, "the form of covering the void spaces between the walls of a building ultimately governs that of the openings in the walls that are beneath it; the vaultings, which constitute so essential a part in Gothic architecture, become the proper object of investigation." He then explained that while in this country the Saxon builders imitated the Romans by adopting semicircular arches, there was a great difference in the manner of constructing vaulting. Instead of cut masonry the Saxon vaults were formed of rubble which consisted of fragments of stone mixed with mortar, with a lining of stucco. As the arches were of small diameter, and were supported by columns or piers, there was not much opportunity for constructing groined arches. In fact, from the feebleness of their construction in rubble, they were inapplicable on a large scale. But when it became necessary to cover wider spaces in churches more security was required, and in addition to the arched ribs which were occasionally employed to support, as it were, the rubble, diagonal ribs were introduced beneath the intersections of the cross vaulting. As examples of the first kind of groined arches SAUNDERS selected the church of St. Peter-in-the-East, Oxford, which was supposed to have been erected in the ninth century, and a part of the crypt at Canterbury having rubble vaulting and cut stone arches. At first the diagonal ribs were plain, but they were afterwards formed with mouldings in order to correspond with the transverse arched ribs. There was consequently not only an increase of strength by which wider spaces could be vaulted, but also a more ornamental appearance. He offered the following remarks on the method of construction adopted :—

> That these diagonal ribs were put up after the shell of the vaulting was turned is shown by the stucco on the under surface being generally brought down a considerable depth below the rubble-work of the vaulting, over the haunches of the diagonal ribs, which is the consequence of the diagonal rib being of a circular curve, while the intersecting line of the cross-vaulting tends to an elliptical one, and that they were added for strength is evinced by instances in the same work, where they have been put up only so far as they were judged to be necessary, contiguous groins being left without them, which in some cases are visibly failing for want of the additional support. The means pursued in the construction of vaulting at this period are particularly interesting, as they conducted to that change which has been the object of so much inquiry. The builders do not seem to have been aware that in the projection of the curves if the diagonal ribs were circular, those at the sides should be elliptical, to coincide with each other, and, on the contrary, that if the side ribs were circular the diagonal ribs should be elliptical.

The second class of vaulting, he said, is to be found mostly in the aisles of cathedrals and large churches dating from the twelfth century. But the masons were taught by experience that the rise of the diagonal and transverse arches did not always correspond, and the efforts which were made to get over the difficulty resulted in distortion of the contours as well as weakness. "Almost every specimen," says Saunders, "in this stage of their works evinces a struggle to accomplish the twofold object of applying semicircular diagonal ribs for greater strength, and of combining three arches of equal height, but of different subtenses, in one bay of vaultings in a manner that might produce regularity in the workmanship. Not being able to effect this with circular-topped arches recourse was had to an expedient, simple in itself, but which led to the production of those extraordinary works which are not less the admiration than the astonishment of the present age." The first device for surmounting the difficulty was, he said, to substitute for the shorter semicircular arch two portions or segments of the arch formed by the diagonal rib, which could thus form a pointed arch of equal height with the arch formed by the diagonal lines. The diagonal ribs eventually became the semicircle, and the transverse ribs ceased to be a continuous curve. One of the consequences, according to Saunders, of the knowledge which had been gained by experience was that the ribs could be set up before the shell of the vaulting. But the transverse ribs were found to be unsteady, and consequently, as he says:—"A stone band was added beneath the intended rib of the vaulting for connecting the several ribs together, and successively intermediate ribs were introduced. The numerous stone ribs, strongly bound together by the application of the ridge band, afforded by their proximity a skeleton well adapted for laying on the shell of the vaulting above it, with scarcely any centreing more than was required for putting up the ribs."

Saunders evidently, as a practical man, believed that it was not by an extended knowledge of geometry, but it was through a longer experience in construction and it may be in fudging curves, that the difficulties of construction under the new system were overcome. He was not one of those who believed that all Gothic curves are perfect in a geometrical sense, for he found ribs which were adapted to their position regardless of theory. Thus in one passage he says:—

> In narrow aisles the diagonal ribs were frequently much elevated, with pointed tops. The ridge band often inclines downwards from the top of the diagonal to the top of the transverse ribs, which along the middle division of churches (where the breadth between the walls usually makes the longest side of a bay) is scarcely perceptible from the floor. This inclination of the ridge band is caused by setting up the transverse rib, so as to preserve the centre of the curve's circle (being the same curve as that of the diagonal rib), on a level with the base of the springing of the arch. When one side of a bay is very much contracted in proportion to the other side (as sometimes happens against the side walls of the middle division of churches) the great inclination of the ridge band, which would be occasioned by this procedure, is in several cases avoided by making a portion of the transverse rib on the narrow side a perpendicular line for some height above the base of the other ribs. As builders became more expert in the execution of point-arched vaulting, other means were afterwards practised to produce a better accordance of lines, by a little variation in the curves of the ribs.

In referring to examples Saunders confined himself to those found in this country. Hence it is that he starts with Norman examples and endeavours to explain how easy it was to develop the plain semicircular arching and barrel vaulting into groined vaulting. He does not enter on the interesting problem how Norman architecture obtained its characteristics, nor does he investigate the influences which in France caused the development of the Norman style into others which afforded more scope for scientific masonry. He has, however, anticipated a system of inquiry which has followed the steps of the Romanesque builders from south to north in France, and his aim was similar to that of the latest students of architecture. He believed that the manner of covering open spaces should be taken as the most essential principle of a style, and considering how varied and fantastical were the theories which were accepted in the year 1810, more credit should be given to the attempt of George Saunders than it has received. He was undoubtedly the pioneer of the system of study which has produced the most satisfactory results, although it may be admitted that similar conclusions were arrived at by other students independently.

PRINCIPLES OF CONSTRUCTION FOR ARCHITECTURAL STUDENTS.

By E. Wyndham Tarn, M.A.

(*Continued from last week.*)

IX. *Deflexion of Beams.*

When a straight beam is fixed horizontally at one end and is loaded at the other end or over its whole length, it is no longer straight but is curved downwards, and the vertical distance of the outer end from the original straight position is called the "deflexion" of the beam. The amount of deflexion caused by a given load will depend on the nature of the material, and will be scarcely perceptible in a beam of stone so long as the load does not approach too near the breaking-weight. Also in beams of cast-iron the deflexion for a safe load is but small, but in those of wood, wrought-iron and steel a considerable amount of deflexion may be produced by a safe load and without injury to the elasticity of the material. The resistance of a beam to bending is called its "stiffness," while the resistance to fracture is called its "strength," and these two kinds of resistance follow very different laws.

When beams are employed in a building it is essential that the deflexion under the load sustained should not exceed a certain quantity, otherwise the stability of the structure will be endangered. A convenient rule has been laid down by Tredgold in the case of floor-timbers, that the deflexion in the middle of a horizontal beam supported at each end shall not exceed one-fortieth of an inch for every foot of length, or 1 inch in a beam 40 feet long, when fully loaded.

In a beam of "uniform strength" throughout its length and supported at each end, the line of curvature when deflected by a load at the centre will be an arc of a circle, and the deflexion will be proportional to the square of the length divided by the product of the depth into the modulus E. In all other beams the deflexion varies as the cube of the length multiplied by the load and divided by the product of E into the "moment of inertia" (I) of the section. In a beam of rectangular section we have I proportional to the breadth and cube of the depth, so that the deflexion in beams differing in size but of the same material and with the same load is proportional to the cube of the length directly, but inversely as the breadth and cube of the depth.

The "stiffness" of a beam or its resistance to bending being inversely as the deflexion under a given load, must therefore be proportional to the breadth and cube of the depth, and inversely as the cube of the length; while the "strength," or resistance to fracture, has been shown to be proportional to the breadth and square of the depth, and inversely as the length.

When the load is uniformly distributed over the whole length of a beam which is supported at each end, its deflexion is five-eighths of that produced by the same load placed at its middle point; and in calculating the deflexion of a beam under a given load at the centre we must add five-eighths of its own weight to the given load in order to obtain the correct amount of deflexion.

If the beam is fixed at one end and loaded at the other, we must add three-eighths of the weight of the beam to the load in order to obtain the true deflexion.

In a beam of rectangular section supported at each end and loaded by a weight W in the middle, the deflexion is found by the following rule:—Divide the product of W into the cube of the length by four times the product of E into the breadth and cube of the depth; all dimensions being expressed in inches, W and E being in tons.

If the beam is supported at one end only and loaded with W at the other end, then the rule for the deflexion is:—Multiply the cube of the length by four times W, and divide by the product of E into the breadth and cube of the depth; all dimensions in inches, W and E being expressed in tons.

To find the load W (including five-eighths of the weight of the beam itself) on the centre of a rectangular beam supported at each end that will produce a deflexion of one-fortieth of an inch for every foot of length, we obtain the following rule:—Divide the product of the breadth into the cube of the depth (in inches) by the square of the length (in feet), the quotient multiplied by E and divided by 17,280 will give the load W; E and W being both in tons or both in lbs. For example, let a beam of timber 10 inches square and 18 feet long have a safe load at the middle of 3,173 lbs. (including five-eighths of its own weight), which produces a deflexion of ·8 inch; but by Tredgold's rule the deflexion ought not to exceed ·45 inch, consequently in order to comply with that rule the load must be reduced in the proportion of 45 to 80, and must not exceed nine-sixteenths of 3,173 lbs., or 1,785 lbs.

Suppose a beam 20 feet long, 10 inches broad and 15 inches deep, and weighing 625 lbs., to be loaded with a weight that produces a deflexion of ½ inch; then we find W to be 8,484 lbs., and deducting five-eighths of 625, or 391 lbs., from this, we have 8,093 lbs. for the load at the middle of the beam.

If the load is uniformly distributed over the entire length of the beam, the weight which would produce ½ inch of deflexion in the last example will be eight-fifths of 8,093, or 12,949 lbs.

By applying the above rule to floor joists of fir, we can find the necessary scantlings for stiffness, if we suppose that they have to carry a load of 120 lbs. per foot of length. For a bearing of 10 feet they should be 7 inches by 2 inches or 6 inches by 3 inches; for a 14 feet bearing the scantling should be either 10 inches by 2 inches or 9 inches by 3 inches; for 18 feet bearing the scantling should be 10½ inches by 3 inches or 9½ inches by 4 inches.

A rolled iron beam of I-section is 10 feet long and has a load of 3½ tons at the centre, its own weight being 1-10 ton, five-eighths of which is ·0625 ton, and the weight at the centre becomes 3·5625 tons. The deflexion in the middle with this load is one-seventh of an inch, and by Tredgold's rule it should not exceed ¼ inch, so that a heavier load might have been put upon it.

A steel girder 25 feet long, five-eighths of whose weight is 1·2 ton, is loaded at the middle with 35·4 tons, or the total load is 36·6 tons; the deflexion with this load amounts to ·86 inch, but by Tredgold's rule it should not exceed ·625 inch; consequently the load should be reduced by one-third.

(*To be continued.*)

THE IPSWICH MUNIMENTS.

THE manuscripts of the Corporation of Ipswich consist of rolls, charters and letters patent, deeds (municipal and private), books and miscellaneous writings. The Ipswich muniments open with a borough courts' roll of 39-40 Henry III. and a charter, dated in the fortieth year of the same king's reign, which are all that remains to the borough of the few evidences that John le Blake ("vn faus comun clerk de la dyt vyle," as he is described in the three extant copies of the lost Domesday Roll "Des Leyes et Usages de Gippewiz, of 19 Edward I.") left behind him in the fifty-sixth year of the third Henry, when to the consternation and grievous inconvenience of his comburgesses he fled from an excited town and from outraged justice, carrying with him "le veuz domesday des leyes e des aunciens vsages de la ville de Gippewiz e outres roules e remembrauuces de meyme la dyt vile."

To replace the first Ipswich Domesday Roll, thus "faucement elloynie" by John the Black, a committee of twenty-four of the wisest and best-instructed burgesses of the community, duly appointed for the task by their fellow-townsmen in the nineteenth year of Edward I, produced the second "Domesday des Leyes e des Usages de Gippewiz." Like the roll stolen by the false common clerk more than six hundred years since, this second compendium of the laws and usages of the borough has perished. But fortunately the work of the twenty-four compilers has been preserved to students of the present generation in two official copies made in Edward II.'s time that still remain in the borough, and also in a third official copy, of inferior workmanship and a later date of the same period, that passed some thirty years since into the keeping of the trustees of the British Museum. Of the interest and value of these three ancient and official copies it is enough to remark in the present place that they may be accepted as faithful and almost contemporaneous transcripts of the lost roll that was perhaps the most comprehensive summary of the laws and customs of a particular borough produced in this country by clerks of the thirteenth century.

The year that gave students this remarkable digest of the municipal laws and usages of the East Anglian borough also witnessed the execution of the charter by which, in confirmation and extension of a previous act of restitution made "during pleasure," Edward I. reinstated his Ipswich burgesses permanently in the possession of their town and its liberties, which he had formerly withdrawn from their tenure and taken into his royal hand, on account of certain transgressions and excesses of which they had been guilty; and from the date of this perfect restoration of its forfeited powers and privileges the evidences of the municipality are copious and various, though unfortunately by no means complete. If their memoranda of litigious proceedings are for the most part neither entertaining nor instructive, the earlier curial rolls preserve numerous illustrations of the community's progress in commerce, internal government and intercourse with foreigners. Enabling the searcher to observe the transmission and diffusion of properties, and survey the vicissitudes of families within the liberties of the borough and other parts of East Anglia, the "Rotuli de Recognicionibus ac de Testamentis" afford some striking revelations of the various motives that determined testators to leave their property to pious and charitable uses. The charters of the fourteenth century resemble the rolls of the same century in offering some good examples of elegant and facetious penmanship, that may be attributed confidently to the same artistic common clerk who, in the days of Edward II. and Edward III., seldom produced a legal instrument without displaying a combination of drollery and adroitness that would nowadays put their possessor in the first rank of comic draughtsmen. Two or three of this artist's happiest and most sportive performances may be found amongst the "Deeds, Municipal and Private," in two different packets of Common Soil Grants and other conveyances, whose precise and sometimes picturesque details should be studied by illustrators who would reproduce in words or on canvas the most agreeable and characteristic aspects of the mediæval borough.

Should misadventure deprive them of all their other writings the burgesses of Ipswich would retain in their MS. books a body of municipal evidences sufficient for the maintenance of their various corporate privileges, and also for the illustration of the fortunes of their town from John to Victoria. Opening with the two works that together with transcripts of the second Domesday Roll contain no less reliable copies of much older records, the series of volumes comprises the Great Domesday Book, into which Richard Percyvale in the twelfth year of Henry VIII. copied all "the olde grauntes liberties ordynaunces lawes and good constitucions of the burgh as he cowld fynd prescripscyon or good mater of record for;" the assembly books and general court books from early days of Elizabeth to the present century; the yearly accounts of the chamberlains of the borough, from the time of Philip and Mary to the reign of George III., and the massive paper folio in which Nathaniel Bacon digested his extracts from the borough rolls and other materials for the history of the laws and customs of Ipswich from the earliest times to the last year of Charles I. The chamberlains' accounts will prove highly interesting to the antiquaries and serviceable to the historians of the English stage. The receivers of the municipal petty rents and other petty payments to the communal exchequer, the chamberlains of Elizabethan Ipswich, were also the custodians and distributors of the money that passed yearly from the hands of the Corporation in petty cash payments; and it devolved on them, as the petty paymasters of the municipality, to pay away the sums assigned by the bailiffs to the actors, musicians, bearwards, jugglers, tumblers, ball-players, professional wrestlers and other strolling entertainers who visited the town in the pursuit of their respective vocations. From the memoranda of these payments in the chamberlains' accounts, it appears that, whilst Ipswich was on the one hand abundantly supplied with congenial diversions, the practitioners of the entertaining arts had on the other hand no reason to charge the town with stinginess or want of sympathy. The number and diversity of the separate entertainers or sets of performers who visited Ipswich in the best seasons for "touring" are not more remarkable than the number of the different companies of licensed players who in the course of a few years came to the borough with certificates of royal protection and service. Students and writers familiar with the annals of the stage will learn with interest that, whilst Ipswich was visited once and again in the years 1606 to 1611 A.D. by the king's "beareward," who took a fee of 10*s.* from the chamberlains, the king's "players," who received 26*s.* 8*d.*, and the queen's "players," to whom 26*s.* were granted by the bailiffs, the town was also stirred by the performances of the "prince's players," the "younger prince's players," and "the Princesse Elizabethe's players"—the younger prince's players winning so much of the municipal favour that they were rewarded with 40*s.*, whilst his elder brother's company and his sister's company received no more than 26*s.* 8*d.*, the ordinary honorarium to a royal company of actors.

But whilst they are remarkable for the diversity and importance of their principal items, the Ipswich muniments are also remarkable for matters conspicuous by their absence from the chamber that contains so large an accumulation of records for the entertainment of antiquaries and the guidance of social historians. Retaining much that is valuable, the collection of MSS. has also sustained serious losses. Reference has already been made to the removal of a manuscript that passed some twenty years since to the British Museum, a loss which scholars may regard with complacence now that the borough can regard it without annoyance. Something, however, remains to be said of two serious defects of the Ipswich archives that are the more noteworthy, because they seem to point to two wholesale withdrawals of historic evidences.

It is so manifestly in the nature of things for an ancient corporation to allow some of its muniments to slip from its hands, that had Ipswich retained only an inconsiderable proportion of its old letters, the partial disappearance of its former accumulation of a class of writings, peculiarly attractive to autograph hunters and pilferers of literary curiosities, would have been too much a matter of course to occasion astonishment or provoke strong expressions of regret. But instead of retaining a few of its ancient epistles the borough cannot at the present time produce a single file, or packet or paper or scrap of all the letters that in former time flowed in regular current to its bailiffs and portmen, its coroners and common clerks, from Lords of the Council and other prominent personages of the State. Entries in the assembly books, the general court books and the chamberlains' accounts demonstrate that letters came in steady stream, month after month and year after year throughout successive generations, to the chiefs of the municipality from its representatives in the House of Commons and from persons of high official rank. And in the absence of these entries in the municipal registers, it would have been no less certain that the town was in frequent correspondence on half a hundred different kinds of business with the Privy Council, the Council's various members and other dignitaries of the realm. It cannot for a moment be imagined that no care was taken for the permanent safety of such letters by the portmen and town councillors, who were at pains to preserve files of charity tickets and voting papers, and thousands upon thousands of renterwardens' vouchers, containing nothing of greater moment than a plumber's bill for a few shillings or a pensioner's acknowledgment of a weekly bounty. Nor can the complete withdrawal of so large a quantity of invariably entertaining and sometimes extremely valuable manuscripts from the muniments of the borough be attributed to the ordinary operation of the various influences that may be expected to diminish gradually every collection of ancient writings in the absence of exceptional precautions for their preservation.

But this total withdrawal of official correspondence is perhaps less strange and regrettable than the great gap in the series of the borough's rolls from the close of Edward IV.'s time to the seventeenth year of Elizabeth. Considerable in the six previous reigns the Ipswich Rolls became more voluminous in the days of Edward IV., when the practice arose for the Ipswich common clerks to gather into a single large yearly roll (called a Dogget Roll from the common clerk's docquet, alias dogget, of the multifarious contents of the several membranes) all the principal records of matters done in the various courts of the borough during the previous twelve months. John Balhed, common clerk in the time of the Fourth Edward, was the first keeper of the municipal archives to make up one of these large yearly rolls and docket it with a table of contents, and the practice thus inaugurated was continued by subsequent common clerks to the middle of the seventeenth century. In the Ipswich muniment-room there remain four Dogget rolls that were composed and filed in the Fourth Edward's time, and twenty-four similar rolls that were arranged and docketed in different years of Queen Elizabeth's reign. But not a single Dogget roll remains of the ninety-one large composite rolls that were put together under the dockets of successive town clerks between Edward IV.'s death and the opening of Elizabeth's seventeenth year. Brought together into a wrapper and tied with two strong strings, as they may be found at present in the muniment chamber of the Ipswich Town House, the rolls of Edward IV.'s period constitute a cylindrical bundle almost as big as a small garden-roller. The collection of Elizabethan rolls makes a much larger bundle. But whilst so much remains of the rolls of these two reigns, all the meagre remains of the rolls for the intervening period—the period whose rolls might perhaps have yielded a large body of new facts respecting Thomas Wolsey, his kindred and his immediate progenitors—could be drawn into a single parcel little larger than an ordinary bundle of firewood. Nothing is known at Ipswich of the circumstances under which the borough was deprived of so large a quantity of its rolls. But it may be fairly assumed that this extraordinary and suspicious hiatus in the series of curial records was the work of some person or persons who valued the missing rolls for the same considerations that will make their loss a subject for regret to the many students who have hoped that a careful examination of the Ipswich archives would enlarge and solidify their slight and shadowy information concerning Wolsey's parentage, early training and domestic story. The extant records of the same period are also strangely silent respecting the family of the famous cardinal. Indeed, the only memoranda touching the Ipswich Wolseys that came to view during a long and careful inspection of the Ipswich records were the entries of the chamberlains' accounts, which certify that in the middle of Queen Elizabeth's reign a certain Elizabeth Wolsey (otherwise styled "Mother Wolsey") acted as town scavenger, receiving a modest yearly stipend "for her paynes in clensinge the Corne Hill, the Butcherye and the New Keye."

THE COVENANTERS' HOUSE.

THERE was sold at Edinburgh on Monday the remains of the interesting historic house in the ancient and royal burgh of South Queensferry, on the Firth of Forth. It is a dilapidated, red-tiled building, and is known as Queen Margaret's Palace, and also as the Covenanters' House. The former name it owes to its supposed association with Queen Margaret, the grand-niece of Edward the Confessor, and wife of Malcolm Canmore, who succeeded Macbeth on the throne of Scotland. The building is in the vicinity of the Bink's Rock, the old landing-place of the ferry used by Malcolm Canmore and his queen in their journeyings across the Forth, and, according to tradition, it was made use of by the "saintly queen" of Scotland when storm-stayed on her way from Edinburgh to Dunfermline. Unfortunately, however, it is very doubtful, to say the least, whether the present building, or any portion of it, was in existence in the eleventh century. Indeed, it seems to belong to the early part of the seventeenth century. But the ground on which it stands was part of the ground conveyed by Malcolm Canmore, at the instigation doubtless of his pious wife, to the abbots of Dunfermline, who again gave it to the Carmelite Friars. According to one of the traditions of Queensferry, Mary Queen of Scots passed a night in the "palace" after her escape from Lochleven Castle. There is, however, little ground for the tradition. The name, "The Covenanters' House," by which the building is also known, rests on a surer foundation than the higher title. In the seventeenth century the building was the principal hostelry in the town. To it came two fleeing Covenanters seeking refuge. They were tracked, however, by their pursuers, and one of them was killed on the staircase while assisting his companion to escape. The Covenanter who was killed was Henry Hall of Haughhead, and on his person were found the famous "Queensferry Papers," which the authorities afterwards caused to be printed and circulated throughout the country. The building occupies about 45 feet by 30 feet of ground, and consists of three storeys—a ground flat and three flats above. About fifteen years ago it was condemned as unfit for occupation, and since then it has been allowed to fall into a still worse state of dilapidation. Last winter the burgh authorities gave public notice that owing to the building having become "waste and ruinous and a receptacle for filth," application would be made to the Court for a warrant to sell it, failing its being put into a state of repair within three months. The owners, however, seem to have given up all right and interest in it. Warrant to sell was granted by the Court, the upset price being fixed at 20*l.* At the auction on Monday the building and ground were sold for 41*l.*—more than double the upset price. It is not known what the purchaser is to do with the building. Before the sale it was examined on behalf of the Marquis of Bute, but he did not offer.

A Magnificent marble statue of *Apollo*, life-size, has been discovered in the vicinity of Athens. The head is wonderfully well preserved. The workmanship is that of the fifth century B.C.

The Duke of Devonshire, as president of the Board of Education, has appointed Mr. Gilbert R. Redgrave, senior chief inspector in the South Kensington branch of the Board, to be an assistant secretary for technology. In the ensuing autumn the Duke proposes to appoint a departmental committee, on which the County Councils and the City and Guilds of London Institute will be represented, to consider, inter alia, the co-ordination of the technological administration of the Board of Education with the technological work at present carried on by educational bodies other than that Board.

NOTES AND COMMENTS.

A new arrangement of lightning conductors has been adopted for St. Paul's Cathedral. The air terminals, jointing-boxes and earth connection are the invention of Mr. Hedges, C.E. Ordinary soldering of the joints of conductors does not give permanency. Boxes are therefore used furnished with lugs, screws, or straps, and the joint is made by pouring solder over the loosely spliced conductors in the box. Aigrettes for terminals are easily fixed to the conductor. The air terminals are constructed by prolonging a solid copper pointed rod, which is united to the conductor by soldering both into a box sleeve joint, the former being actually inserted into the strands of the cable. For the earth plate usually adopted Mr. Hedges has substituted a "tubular earth," consisting of a specially constructed iron pipe perforated at the lower end and furnished with a spike; this is driven by special tackle into the ground, other lengths being screwed on until the required depth is attained. The new system of perpendicular and horizontal conductors has required more than a mile of cable, and there are about fifty aigrettes. The whole of the work has been carried out by the workmen of the cathedral surveyor's staff under the direct superintendence of Mr. Hedges.

It is satisfactory to know that the creosoting process which is largely used in England has not been considered as obsolete, but the reverse, by American engineers who have been investigating the subject. Mr. John Bethell, the discoverer of the process, was a solicitor and brother to Lord Chancellor Westbury, but, like the present Lord Armstrong, he took great interest in engineering, and gave up his original profession in order to devote himself to the superintendence of his works. Mr. Chanute, one of the engineers referred to, has ascertained that railway sleepers when creosoted endure from twenty to twenty-seven years. The French engineers, who have much faith in creosoting, occasionally employ chloride of zinc and sulphate of copper as a substitute. Mr. Chanute found that after the impregnation of the wood by a chemical salt an injection of glue and tannin was advantageous, as it formed a hard covering of the zinc chloride. The French engineers appear to make assurance doubly sure by sometimes using zinc chloride and creosote, but there is a general conviction that, in spite of its English origin, creosoting can hold its own against all rivals. A preservative devised by Mr. Kummer, jun., another American, consists of 38 per cent. of dead oil of coal tar, 60 per cent. of melted resin, and 2 per cent. of formaldehyde.

At the International Congress of Architects in Paris a paper was read by Herr Bohnstedt, of Minden, on "The Conservation of Public Monuments." He stated that last year the German historical and archæological societies held meetings at which the following resolutions were adopted:—1. A fixed monument of artistic or historic interest belonging to the State, or to a corporation, over which the public have some claim, shall not be destroyed nor restored, repaired or modified, nor left to decay, without the consent of the authority charged with the control of such monuments. 2. No movable object having artistic or historic interest belonging to the State, or to a corporation, can be affected in any way without the approval of the responsible authority. 3. Archæological explorations or researches of any kind are not to be undertaken on ground belonging to the State or corporation without official sanction. 4. Movable objects having artistic or historic interest which belong to an individual, or private grounds containing monuments, can, in case of peril to them, be appropriated by the State as public property. Herr Bohnstedt came to the conclusion that the most effectual way to secure the protection of antique works of all kinds was to induce the public to take an interest in them. It was stated that in some of the Belgian towns the inhabitants are preoccupied not merely with the conservation of monuments, but with the continuance of the ensembles or grouping of monuments. Most other countries were very far from attaining so ideal an interest in antiquity.

For the first time in the history of exhibitions electricity is being applied to the production of a medal which is to be the evidence of success in the Paris Exhibition. The model has been prepared by M. Chaplain, who is famous for works of the class. The reproduction is now being made by a pointing machine on a small scale. Instead of merely marking the relative distances of the various points, it also does the work of the chiseller and operates on the steel until the desired depth is attained. The number of revolutions which the instrument executes is incredible. But from the delicacy of the diamond point it is expected that the mechanical origin of the representation will not be apparent. The latest French coins have been reproduced by a similar process. It is a pity that some of the ancient Greek and Renaissance medallists cannot revisit the earth and express an opinion on a class of work which was supposed to have acquired value because there could be nothing mechanical about it. Possibly we shall next hear of electric cutters in sculptor's studios reproducing colossal statues from small models.

Among the numerous handbooks on various industries published by Messrs. Scott, Greenwood & Co. are some relating to the application of art by Mr. W. N. Brown. There are treatises on house decoration and painting; the art of enamelling on metal; dipping, burnishing, lacquering and bronzing brass ware, together with a history of decorative art. They are written in a style which is adapted to the class of readers for whom they are intended, and will no doubt incite students to advance to more exhaustive manuals on the different subjects. Many excellent authors have been drawn upon for the information, but throughout care has been taken to avoid all statements which would appear difficult to the comprehension of beginners. The books can be turned to good account by studious mechanics, and will aid in the promotion of technical education.

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: THE SOUTH DOOR. THE EAST END. THE NORTH TRANSEPT DOOR.

There is a close correspondence between the interior and the exterior of the lady chapel of Lichfield. John Britton, who is less enthusiastic about Lichfield than the other cathedrals of England, makes an exception when describing the eastern part of the building. He considered that Lichfield has no pretensions to grandeur, and is not as picturesque and beautiful as Salisbury. But of the lady chapel, he said it "may be regarded as one of the finest and most elegant examples of ecclesiastical architecture in England. Its semi-octangular form is well adapted to display both its sumptuous painted glass windows and its numerous and rich sculptured ornaments. The whole is calculated to seduce and convert even infidelity itself, for cold and callous must that person be who can contemplate such a scene, and such lessons as here exhibited, without emotions of admiration and some degree of enthusiasm." It will be seen from the illustration that the lady chapel forms an admirable termination to the building. Another view shows the south door. The levels of the ground on which the cathedral was erected made it necessary to have the entrance to the south transept approached by several steps. That was not an arrangement which commended itself to Mediæval architects, for they preferred utility to effect, and wished to avoid all obstacles to the admission of old and weak people to the churches. But at Lichfield it was necessary to employ several steps. The doorway is not so satisfactory a composition as any of those in the west front, for it suggests that Norman influence was in operation at a later time. One of the shields in the tympanum bears the arms of Launcelot Addison, who for a short period held the office of dean, but when his illustrious son was born he was only rector of a Wiltshire parish.

HOTEL RUSSELL, RUSSELL SQUARE: DETAIL OF MAIN ENTRANCE.

DESIGN FOR SHOOTING BOX, NEAR ANDOVER.

This building is to be erected near Andover. The timbered work will be of oak, with trowelled plaster. The estimated cost is 4,500*l*.

THE NATURAL HISTORY MUSEUM, PARIS.*

LAST year the new Museum of Natural History at Paris, situated in the Jardin des Plantes, was thrown open to the public. It marks a stage on the road to rational architecture, a step towards logical forms and architectonic decoration that should afford great encouragement to those who are interested in the future of architecture. The architect is M. Dutert, who had already attracted attention to himself by the Machinery Hall (Galerie des Machines) which he designed for the Exposition of 1889. Well-merited praise was bestowed upon the bold curve of the roof of this immense hall, and the ingenious manner in which iron, the principal material employed, was treated according to its nature, and was allowed to have its own architectonic forms, instead of borrowing, as is usual, those of wood.

The Natural History Museum shows a development of the same principles. In the general view we see a large, high-roofed pavilion, where is situated the entrance. Then come galleries, fronting on the garden and on the Rue Buffon. They stop at a fore-part which will mark the middle of the building when it is doubled by the addition of a second part analogous to that already erected. The bond consists of large bricks, one laid on edge to two laid flat, each brick laid lengthwise, alternating with one laid endwise. The dividing line of the floors is traced by two courses of white stone running around the building, a more prominent cornice marking the principal division and a simple band indicating the intermediate floor. The window lintels, the bas-reliefs, the small square niches, the capitals of the tambours and the consoles are also in white stone. The aspect of the building, red with white markings, is very agreeable, and it is easily interpreted.

The entrance is beneath a large arch built into the fore-part. This arch starts directly from a high base, without any abutments. It has a very fine appearance. Above is the large bay of the library, enclosed by four tambours, whose substantial capitals support the entablature and cornice on which the roof rests. On the right of the entrance is the lecture-room and on the left the main staircase. On the lateral faces looking on the garden and the Rue Buffon are the Exposition galleries, with skylights. These galleries have two balconies one above the other, filled with glass cases. We admire the fine ground-floor windows, the shape of their flattened arcades, and the manner in which the imposts, isolated from one another, fall on the tambours of the capitals. It is an excellent architectural composition. On the first floor there are small windows in pairs. These scarcely admit sufficient light, but the interior justifies this arrangement. Between these windows there are bas-reliefs on marble plates fitted in, and two larger panels in bronze on a gold ground.

Such is the general external arrangement. It is simple but not without charm. Within we find the same sobriety and clearness. The divisions are sharply defined ; the iron beams in the ceilings are not hidden by a layer of plaster, but stand forth unshrinkingly.

If we now draw nearer we see that the determination to be logical is displayed not only in the leading features of the building, but has been carried out with remarkable care in the decoration, down to the smallest detail. This is such a new thing that it is needful to speak of it at some length. Here we actually have an entire monument constructed without any Renaissance proportion, without any reconstitution of Orders, without any composite or Corinthian capitals, without foliage, without pilasters, without triglyphs, without pediments to each window, without ogees, without ovolos and without dentils. We do not find a single acanthus leaf nor any Gothic foliage, and no one can recognise and salute on these walls and ceilings the familiar ornaments that figure on all our edifices, public and private. For what purpose, then, did the architect study for years at a school if it was not in order to attain proficiency in the handling of the accepted and indispensable elements of decoration? Why did he fill his portfolio with the necessary formulæ for ornamenting any monument? Is he himself to seek a decorative theme in harmony with the kind of building he has decided upon, to hunt after novelty in details, and to invent new motives wherewith to express his views as to ensemble? M. Dutert has not deemed this superfluous, and herein lies the great originality and merit of his work. Having constructed, to be used as a museum, a light, practical edifice exactly adapted to the requirement of the collections to be exhibited and the classes to be held therein, he was anxious that the decoration should distinctly indicate the purpose of the building. In a museum zoology and botany are studied ; consequently the animal and vegetable kingdoms shall supply the decorative motives to be employed. Everything is based on this leading idea, and we shall see with what ingenuity M. Dutert has carried it out.

First let us take the entrance pavilion. The doorway is decorated with two different friezes. On the first curve there are palm leaves in braided cables, and on the outside arch a series of scallop shells. Above the door, on a stone platband underneath the cornice, there is a large "Gypætos carrying off a lamb." It is the work of M. Gardet, one of our clever animal sculptors. But what we are examining at present is its decorative rôle, its value in the general scheme of the edifice. From this standpoint it is excellent. The immense outspread wings of the gypætos suit the form of the architectural member they fill, and harmonise exceedingly well with the lines of the cornice below which they display themselves. This motive is repeated all around the building, with variations—eagle, condor, vulture—by different sculptors. The idea, however, originated with the architect.

Here one gets a thorough grasp of M. Dutert's idea. Instead of adopting for these platbands a Renaissance foliage, which he might have had copied by a pupil from a catalogue of ornaments and repeated all around his building, he turned to nature, took living forms, and adapted them to the end he had in view. Thus, on each platband we find a new creation, where the artist, within the limits fixed by the architectural frame and the principles of ornamentation, expresses his personality and taste. In this way, while possessing an entirely modern sense of art, one places one's self under the conditions which governed the production of the decorative marvels of our cathedrals, when invention had not yet been supplanted by a slavish repetition of forms stereotyped centuries ago.

The tambours supporting the entablature have for capitals some powerful lions' heads, and the corner tambours two lionesses' heads separated by a finial in form of a turnsol springing from a sheaf. The idea of having capitals formed of pairs of animals doubtless comes from the Apadena Palace at Susa, where robust bulls uphold on their foreheads the beams of the entablature, but we have here a free interpretation that is quite admissible. M. Velton's lions are well placed and fulfil their part of supports.

Above the cornice there is a curved fronton borne upon two piers. This seems to us the part of this façade which is the most open to criticism. Surely the architect could have found something better than this tympanum, which harmonises neither with the general effect nor with the roof. It is filled with a large decorative composition by M. Allar, "Nature's Three Kingdoms," which is graceful, but commonplace withal.

The minor motives of the façade have received the same careful attention. Note the bunch of flowers starting from the wall. Note, too, in the centre of the window-lintels those vigorous lobsters which mark the spot with their bony carapace. In like fashion, the consoles and corbels bear a sculptured animal, crustacean or saurian, whose silhouette is happily suited to the form of the architectonic member to which it is attached. All these things are happy thoughts that impart life to the front and constitute a decoration in harmony with the ensemble. Even above the cornice the architect has shown signs of originality ; namely, in the iron pieces which hold the gutter, each of which is ornamented with an insect, treated in a decorative spirit. This is an agreeable variation from conventionality and ready-made formulæ.

On the lateral faces we again find the same careful attention to detail. Firstly, below the cornice separating the two floors there is a frieze composed of shells. Then, on every other window there is a set of big birds on the wing ; above the odd windows we find some cartouches disposed in a particular manner with the aid of the same palm leaves that are seen on the front. On these cartouches are inscribed the names of celebrated naturalists. The windows of the upper floor have received special attention. Above each of them there is a niche containing an animal, different in each place, and even the lintel-spring is ornamented, not with the usual dentils, but with small rolled-up shells. Finally, besides the two large bronze bas-reliefs already spoken of, there is a series of marble bas-reliefs with animal figures. These are not all of equal merit. One of the best is an "Entrapped Wolf," by Gauquié. We cannot bestow any praise upon the busts of celebrated savants which have been placed on the entablature of the ground-floor windows. They are mediocre in themselves and have no especial reason to be where they are.

Let us proceed inside. In order to do so, we pass through a large wrought-iron gate. Big branches, completely stylised, spread over its leaves, while its border has smaller branches, with bolder relief and approaching more closely to nature. Both blend gracefully with the massive iron bars. On the right-hand side of the vestibule there is a group executed by Fremiet, one of our leading statuaries. From a decorative point of view we do not find it interesting. As a set-off, we have on the pillars of the hall which support the springing of the arches a new motive in the shape of a crab, vigorously treated and beautifully simple. It is an excellent piece of work. We must, however, make some restrictions as to its adaptation to the capital. In this respect the lizard at the bottom of the archivolts seems much more satisfactory, both form and adaptation being thoroughly justified.

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* A communication from Mr. Jean Schopfer in the *Architectural Record.*

The hall is very simple. To the right we meet with a small amphitheatre for lectures. Its panels were painted by M. Cormon and were to be seen at the Salon of 1898. They depict "Man's Conquest of the Earth." It would be out of place for us to speak of them in detail here.

All the ironwork—railings, balustrades, &c.—have been treated in accordance with the same decorative principle that we have seen illustrated outside. The hand-rail of the main staircase is in bronze. It is composed of two intertwined branches, one of laurel and the other of chrysanthemums. It is a rich, deeply-sunk piece of work, but its very richness brings it too near to nature, which it seemingly wants to rival. The main lines are not simple enough. It is not to a sufficient extent the thing it professes to be and which it should be before all—a staircase balustrade. As has been justly said, it looks more like a quick-set hedge.

For the small staircases leading from the ground floor to the storey above, the decorative theme has been much better worked out. The material is simply cast-iron, but the design is broad and sober. It is highly desirable that our workers in iron should draw inspiration from these irises and look for models in the world of vegetable forms, instead of surfeiting us with the ancient themes, in which there is no longer any savour or originality or life. They are stylised, and being truly decorative do not imitate nature, but merely draw inspiration from it. We meet with them again on the second-floor gallery. From their root to their blossom these superb flowers form in verity a rich and strong ornamental motive.

With a variation, irises are also the subject of the balustrade of the first-storey balcony. Here they are more flowery still, but a clumsy addition has been made in the shape of a bunch of ferns attached to their stems. It seems incredible that the same artist who conceived the fine decorative effect of the irises can have designed the meagre ferns which we see here. Nothing could be uglier or more commonplace than these tufts attached by a cord which one might believe real.

The ensemble which we have just analysed furnishes material for a very good lesson in decorative art, and we will venture to draw our readers' attention for a moment to two essential points. The first is the imitation of nature, and the second the architectonic value of ornamentation.

Of the former, the balustrade which we have before our view provides us with an excellent illustration. We can fancy our best critics reiterate that for decoration we must go to Dame Nature; that it is she who will restore backbone to our art of decoration, which has become exhausted through a slavish clinging to formulæ and the repetition of the same uncorrected types for a period of four centuries. We, too, believe a return to nature to be one of the indispensable conditions for the revival of the decorative styles, for it is certain that where there is copying there is no art. You can reproduce the finest of Roman cornices and put it on a modern edifice without doing anything towards the progress of art. The most ordinary ornament-maker who himself searches after decorative forms is more interesting than the cleverest copier of a Louis XVI. armchair. The former displays invention and individuality, while it is imitation which guides the latter. It is, therefore, necessary—as we are obliged to have models, and that nothing can be created in a dark room—to open one's eyes to nature, that inexhaustible mine of rich, graceful and beautiful forms.

But when our most recent critics have addressed a glowing invocation to nature and talked of the Gothic style and the flora and fauna of our climates, they stop, as if it were sufficient to copy nature in order to attain the beautiful. There could not be a more dangerous illusion. Every artist possessed of the least ability can reproduce with precision a branch of foliage or a bunch of flowers. Our young girl amateurs excel at this task. But that is just as vain a work as simply copying a Classical ornament, and even more so, for the ancient ornament has undergone the modifications necessary in order to obtain a decorative value, which decorative value is absent from the motive taken directly from nature. It would be an interesting task to point out the origin of the great decorative styles and to see from what living forms sprang, ages ago, those ornaments which to us are purely decorative and in which it is hard to trace the ancient types whence they descend, to such a great extent have they assumed, in the course of their long decorative life, the exclusive quality of an ornament. The modern artist if he turns to nature, as he easily can, should reflect upon the essential condition of the work he is going to create and which should be above all decorative. A branch of chrysanthemums in a vase is a thing light, supple, delicate and infinitely shaded. Can you make it reappear, just as it is, on a railing in solid bronze? Do you imagine that people will look with the same eye at the real chrysanthemums in the vase as at their representation in bronze along the staircase? Here, they are flowers; there, in order to be an ornament, they have first to undergo a transformation by art, which gives them a different life in an imperishable material. They have to be stylised, and it is in this passage from the living flower to the ornament that lies all the art. The flower, in itself alone, is not an ornament. One can go to nature and yet produce poor work if one has not grasped the necessity of the radical transformation which it must undergo in order to obtain a decorative value. The conception of the ornament surpasses the idea of the living form. All the great decorative epochs show the stylisation of the living forms.

The second point upon which we desire to dwell a little is that of the architectonic value of an ornament; that is to say, of the place it should occupy in the edifice. It is the most important matter and also the most difficult. An ornament may be excellent in itself and yet be lost if it is not put in its right place in the edifice. It must constitute an integral part of the whole, and appear to be a necessity, the beautiful expression of an organic form. The study of the ancient styles will, in this respect, be most fruitful in consequences. In those admirable models, an ornament, although exquisite in itself, is valuable above all by reason of its appropriate location. One should meditate in front of a Gothic cathedral, of a Greek temple. One then understands what the architectonic value of an ornament is, one sees how its dimensions and its degree of relief are nicely proportioned to the place it occupies, how it matches the architectural form of the member to which it is applied, and, by that member, unites itself with the edifice. Then, too, one understands how, even amid the greatest luxury, it always has a meaning, a *raison d'être;* and this is exactly of what we are least accustomed to think. These are interesting points, and points which have to be solved if one wishes to produce sound architecture; and if we examine modern works we find that these are the very points which apparently receive the scantiest amount of attention from the architect.

In the museum we shall find certain things deserving of commendation and others which are to be avoided. The motive of the big birds with outspread wings under the cornice is a legitimate one, their form corresponds well with that of the architectural member which they cover, and the only reproach to be made is that they are too real. Similarly, the decoration of the corbels and consoles is truly architectonic, in the relief, in the subject and in the place it occupies in the edifice. The capital upon which reposes the crab, however, pleases us less. The crab itself is an excellent piece of decoration, stylised, vigorous and without meanness; but its location is not happy. The crab is manifestly placed upon the capital to ornament it, but its form does not harmonise at all with that of the architectonic member it covers. Place it on a corbel or on a keystone if you like, but not on a capital. The lizard on the archivolts is much more suitably placed.

This criticism is sufficient. The principle once laid down, one can find the application thereof for one's self.

PRISMATIC LIGHTING FOR THE ILLUMINATION OF DARK INTERIORS.*

THE practical application of the refractive property of the lens or prism to change the direction of light-rays passing through it for the purpose of artificial illumination originated with the French physicist, Fresnel, who first suggested its use in lighthouses for the protection of maritime coasts about the year 1815, and the Fresnel lens, in various modifications, is to-day solely used for this purpose.

The Fresnel lens is designed for projecting a powerful beam of parallel light upon objects to be illuminated at a distance. The principle of this device is seen in fig. 1, which shows a central plano-convex lens surrounded by a series of rings or segments of lenses or prisms, to which successively diminishing curvatures or angles are given, in order to give them a common focus.

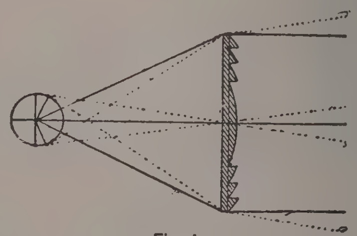

Fig. 1.

Within the past four or five years the application of this principle has been made, and with decided success, to the illumination of dark interior spaces, where the amount of light naturally entering therein is insufficient for satisfactory illumination and artificial lighting must occasionally or constantly be resorted to.

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* A paper read by Dr. Wm. H. Greene before the Franklin Institute, and printed in the *Journal* of the Society.

The requirements of public buildings and modern office buildings in this respect have been most urgent, and the various devices known generally by the name of "prismatic lights" have been extensively used for the purpose and have proved so useful that in one or another form they have come to be regarded by architects and builders, not to speak of a great number of householders, as indispensable.

It is the purpose of this communication to give a brief review of the art of prismatic lighting, which, at the present time, is passing through the active stages of the course of evolution, to which all the arts are subject, in determining the survival of the fittest.

Omitting for the present consideration of the vault light for basements and cellars, where but one form of prism, namely, an approximately right-angled prism depending on total reflection for its utility, is admissible, there are two general methods in vogue of installing prismatic lights to meet the requirements of service.

In one of these the sheet of prismatic glass is placed in a window-frame in the vertical position, thus taking the place of the window-light. In the other, the sheet of prismatic glass is installed in a more or less inclined position, projecting outwards from the window-opening. This form of construction is known in the trade as a "canopy."

The question as to which of these two forms of installation will give the best results is determined by the extent of the sky-opening upon which dependence must be placed for light.

Where this is of considerable area, as, for example, where the windows face a wide street, the prismatic glass set into the window frames in the vertical position will give satisfactory results.

Where the windows receive their light from a restricted area, as, for example, in courtyards or the side-yards of dwelling-houses, and generally in the many situations where high walls rising in close proximity cut off the free access of light from above, the projecting, canopy form of prismatic glass is preferable.

Speaking in a general way, the change from the vertical to the canopy form of installation will be indicated when the incident angle of the light falling on the window-opening averages 60 degrees from the horizontal plane.

The popularity achieved by the use of light-projecting devices of this general nature has called into existence a great number of patented inventions, some claiming special forms of prism construction (in combination, in certain cases, with a prismatic or lenticular formation on the reverse side of the glass), and of a far greater number of design patents and methods of glazing, and other matters of minor detail.

For the purpose of this communication, these minor devices may be left out of consideration, and the several generic forms of prism construction only will be given attention.

These may be divided into two general classes :—

(1) Those in which the glass forming the light-projecting device consists of sheets having on one surface a series of prisms or segments of lenses of any desired angle, the back of the sheet being a plane surface, and

(2) Those in which the glass forming the light-projecting device consists of sheets having on both surfaces a series of prisms or lenses.

The prism-glass most generally known and used is that of the first-named class.

The action of a section of prism-glass of this construction is shown in fig. 2 in elevation and plan. It is obvious that the general refracting effect of the prismatic surface in this and in the other forms of prism-glass will be substantially the same, whether the refractive surfaces of the structure be straight (*i.e.* prismatic), or more or less curved (*i.e.* lenticular), irrespective of the angles of the prism-sections or of the curvature of the lens-segments. It is important, however, that these angles (or curves) be carefully considered, since upon the correct appreciation of this element the light-projecting efficiency of the structure largely depends. Improper angles (or curvatures) may greatly diminish the efficiency of the device by the dispersion and loss of light caused by total reflections in the interior of the glass.

There is general misapprehension regarding the proper action of light-projecting glass, which needs a word of reference. It is assumed by many that the prismatic light should be so constructed that all the exterior light transmitted from the interior boundary of the prismatic window or canopy should be directed in lines substantially parallel to the boundary-walls, floor and ceiling of the apartment, and that the more nearly this condition is realised the closer will be the approach to the theoretically-perfect mode of operation. Some of the manufacturers of prismatic glass endeavour to realise this condition by varying the angles of the prisms uniformly from the centre to the edges of the sheets, on the principle of the Fresnel lens.

A little consideration of what is intended to be realised by prism-lighting of interiors will suffice to show that this view is an erroneous one, and liable to result in practice in a much inferior interior illumination than can be otherwise obtained.

This criticism will be understood by stating the general proposition that the objects of prismatic-lighting are, first, to direct as much extraneous light into the interior as possible, and, second, to direct it in such manner as to derive the largest possible benefit therefrom.

In considering the relative merits of parallel and divergent light transmission by prismatic glass, it should be said that practically as much extraneous light can be directed into the interior space to be illuminated by the one as by the other arrangement of prisms or lenses. But when we come to consider the second portion of the proposition, it can easily be shown that the system of transmitting the light in parallel lines cannot possibly be as effective as the method of divergent transmission, and more especially divergent transmission in both vertical and horizontal planes, and for the following reason :—

It is well known that the best effects in interior illumination are realised when uniform diffusion throughout the apartment is obtained. This effect can be secured most effectively only when all shadows are obliterated by calling into requisition the action of the entering light reflected from all parts of the side walls, floor and ceiling of the apartment.

By the method of directing the transmitted light in parallel lines, the ill effects of shadows cast by opaque objects in the path of the entering light will be realised in the extremest degree, as there will be no ameliorating influence to counteract and neutralise the shadows by reflection from the bounding walls and floor of the apartment; and an inspection of the condition of an apartment thus treated will disclose this objection at once.

By the method of divergent transmission, while quite as much, or more, extraneous light is thrown into the apartment as by the other method, its distribution is decidedly more advantageous, from the fact that the repeated reflections from the bounding surfaces of the apartment cause the practical obliteration of all shadows and a practically uniform diffusion of the light to all parts of the interior.

Returning now to the descriptive portion of the subject, the *modus operandi* of the simplest form of a light-projecting prismatic window is shown in the plan-views in fig. 2, *A* and *B*, in which the light from an exterior source falling upon the plane, outward surface of the glass is refracted at the boundary of the interior prismatic surfaces and projected into the room to be illuminated.

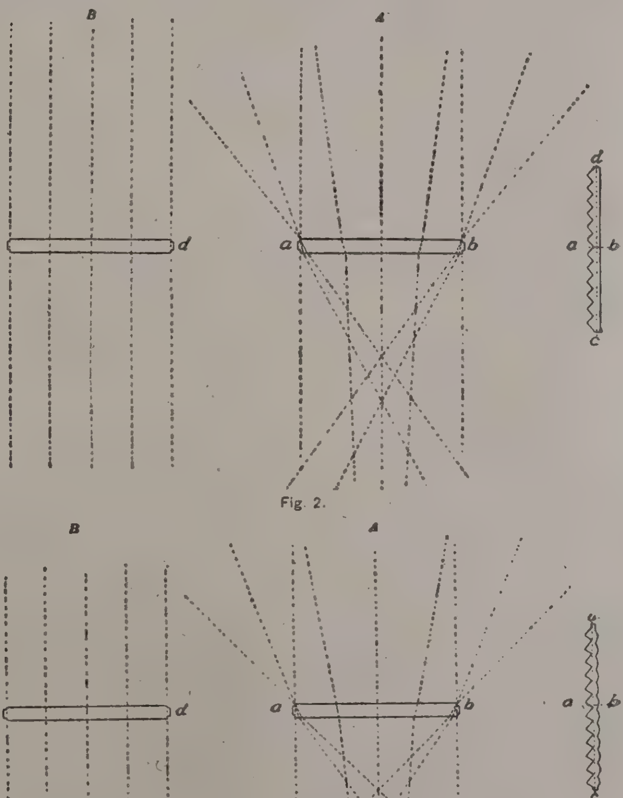

Fig. 2.

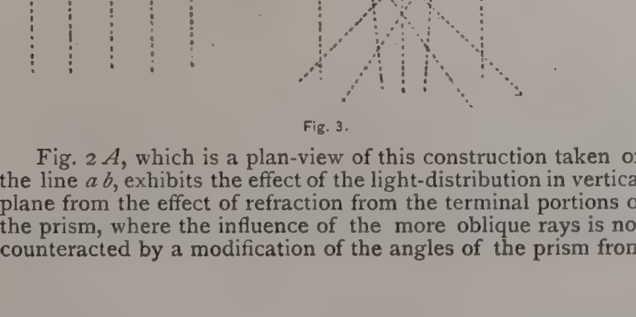

Fig. 3.

Fig. 2 *A*, which is a plan-view of this construction taken on the line *a b*, exhibits the effect of the light-distribution in vertical plane from the effect of refraction from the terminal portions of the prism, where the influence of the more oblique rays is not counteracted by a modification of the angles of the prism from

the centre-line to the upper and lower edges of the glass Fig. 2 *B* is a plan on line *c d*, showing that the light-rays are not distributed divergently in the horizontal plane, but are all directed in parallel lines.

Figs. 3 and 4 represent the action of prismatic glass of the second class, *i e.* in which both surfaces are prismatic or lenticular.

Fig. 3 shows a form of light-projecting glass that has lately come into use, and for which certain advantages are claimed over the construction previously described. The sheets in this form of prism-glass have one surface furnished with prisms—commonly placed toward the room to be lighted—and the other surface formed of a series of lenses of small curvature, distributed in panel form, parallel to the direction of the prisms. This construction, as well as that shown in fig. 2, manifestly exaggerates in the vertical plane the divergent distribution of the transmitted light, and consequently operates, so far as it goes, in the correct manner, utilising the reflecting action of ceiling and floor in diffusing the light.

The construction shown in fig. 3 possesses one obvious advantage over the several modifications of Class 1, namely, that the lenticular form of exterior surface arrests and directs into the dark interior to be lighted a certain amount of the exterior light, which, with the plane exterior surface of Class 1, would be lost by total reflection from the exterior plane surface. Practically all of this additional light thus projected into the dark interior would be gained if the angle of the prism and the curvature of the lens panels were correctly adapted to the length of the apartment to be lighted.

The latest modification of Class 2 remains yet to be considered.

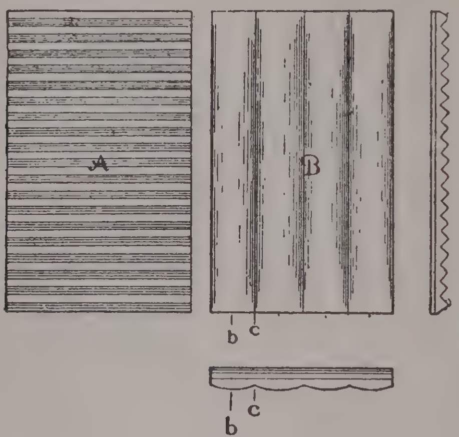

Fig. 4.

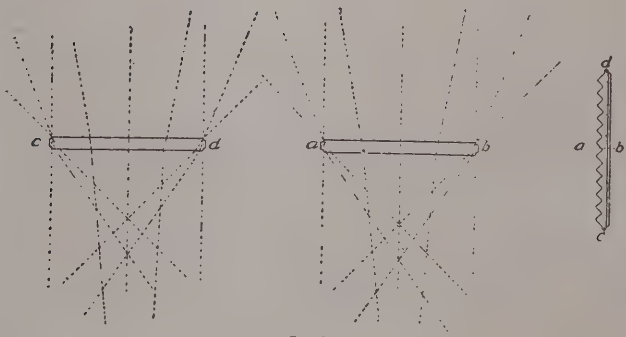

Fig 5

In this the interior prismatic surface of the glass is the same as that just described, but the exterior lenticular panels are arranged, not parallel, but transversely to the direction of the prisms. The details of this form of construction are shown in fig. 4, *A* and *B*, while the *modus operandi* is best observed in fig. 5, *A* and *B*.

The radical difference in the operation of this form of light-projecting glass and that of both forms previously described resides in the fact that the light distribution in this form is exaggerated in the lateral as well as in the vertical plane. This feature is illustrated in fig. 5 *B*, in which *B* is supposed to be a section of the prismatic glass taken on the line *c d*, from an inspection of which it will be manifest that the vertical arrangement of the exterior lenticular panels will serve a similar purpose in this construction in relation to the light falling sidewise on the exterior surface of the glass as the lenticular panels in the previous case serve in relation to vertical rays, namely, to arrest and refract into the dark interior a considerable amount of light in the horizontal plane which would otherwise be lost for useful purposes. All of the light thus collected and introduced into the dark interior by the lateral collecting action of this device is so much clear gain over the devices previously described.

Further consideration will show also that if the interior surface of the glass be provided with prisms of uniform angle, determined in each case by the length of the apartment to be illuminated, this form of construction will secure the same advantage in respect of the vertical diffusion of the entering light as will be obtained from the lenticular prismatic construction previously described.

On theoretical grounds, therefore, the last-described modification of light-projecting glass, belonging to Class 2, should give the best results, if intelligently installed. Comparative practical tests also bear out this conclusion.

An additional and important advantage possessed by prism-glass of the last-named construction (namely, a prism-plate constructed with prisms on one side and prisms or lens-panels arranged transversely on the reverse side) remains to be noticed.

Since all illumination by means of prism-glass is thrown from a comparatively low point, namely, through windows, while all other artificial illumination is directed from a point above, the shadows produced by the prisms on objects in a room constitute a disadvantage common to most systems of lighting by means of prisms, as has been noticed in what has preceded. The light-projecting glass last described, however, by reason of its diffusing quality, both in the horizontal and vertical planes, largely overcomes this objection. Where two such prism windows are used for the same apartment, the light thrown from one window completely overlaps that thrown from the other, thereby practically obliterating the shadows produced by prism-lights of other constructions.

This construction also has the advantage of enabling manufacturers to produce more readily the larger sizes of prisms, from the fact that one surface has projections at right angles to projections on the reverse side, giving a bridge effect, thus adding to the strength of the plate. For this reason, likewise, it is not essential to have the thickness of the body of the glass as great as with other forms; and, inasmuch as there is a larger loss of light, through absorption in passing through a thick than a thin medium, the loss of light from this cause may be very much reduced.

Finally, it may be said that all the various forms of light-projecting prismatic glass accomplish, measurably, their intended purpose of considerably increasing the illumination of dark interiors over what would occur without artificial aid. In the selection of the kind of light-projecting glass and the manner of its installation, the user should be guided by the personal observation of the effects produced, rather than by the claims of rival manufacturers.

THE HISTORY OF ABINGDON.*

ABINGDON, or Seovesham or Seukesham, was once the royal residence of our Saxon kings. It is described by the chronicles as "Civitas formosa . . . divitiis plena"—a beautiful city and full of riches—a description which we shall at once recognise at the present time, where, when the weighty affairs of the kingdom were being determined, a vast number of people assembled. It is rich, too, in monkish legend and historical associations of old time; rich, too, in the existing relics and picturesque beauty of to-day. The old red roofs and white gables of the houses add to its beauty, and to-day, as in the time of the chronicles, it is encircled by "rich fields, flowery meadows and wide-spreading pastures with milk-making kine." Offa, the powerful king of the Mercians and West Saxons, became enamoured of the spot called the Isle of Andersey, near the monastery, and for this island the king gave to the abbot the manor of Goosey, and built a palace. King Egfrid died here in 694, but during the reign of Kenwulf the palace was deserted by the Court and inhabited only by huntsmen, falconers and other servants, who were not considered by the monks as very desirable neighbours, and by their general conduct rendered themselves a nuisance to the brethren. Hence, Abbot Rethan gave to the king the house of Sutton Courtney, with 120 lbs. of silver, in exchange for the island, which thus became again the property of the abbey. Leland states that the site of the palace of the Saxon kings was in his time a barn, which may still be standing. And now with regard to the name Abingdon. It is derived from Abba, an early Saxon settler in Berkshire with his family and followers (signified by the patronymic "ing"), and "don," which, of course, means a fortified place or stockade. Your legends tell us of a British noble named Aben, who escaped from the slaughter of Hengist in 460. Another legend says Aben was an Irish or Celtic monk, and took up his abode on a hill, richly wooded, about three miles from here, where he lived as a hermit, built an oratory, and passed his life in piety and seclusion. Perhaps it was on such a day as this that he felt somewhat thirsty, so he prayed, and a spring of water pure and sparkling came bubbling forth. His oratory was much venerated, and it was the site of the early foundation of your abbey.

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* A paper read by Mr. Ditchfield, secretary, at the visit of the members of the Berks Archæological Society.

The circumstances of its foundation are as follows:—In the reign of Kentwin, king of the West Saxons, and while Cissa ruled as sub-king, one Hean, the nephew of Cissa, obtained from his uncle a grant of land for a monastery amid "Bagley Wood" (of that period), on the spot called Abben's Hill. According to the chronicler, this was "a little beyond the vill called Sunningwell, between two very lovely streams which enclose the spot 'quasi quemdam sinum,'" in other words, near Bayworth or Chilswell, where Chilswell Farm now stands on old property of the abbey, below Hen Wood, possibly Hean's Wood. Many fair acres were added to the property of the abbey and dedicated to the glory of God and the Blessed Virgin upon the high altar of the monastic church. It would be impossible to enumerate all the gifts made by Royal Charter to this famous abbey. Rich men gave freely to its support, for they recognised its practical utility as well as the religious benefits which it bestowed. The world owes much to the dwellers in monasteries. They rescued the people from barbarism and uplifted the standard of the Cross. They emerged from their cells to direct councils, to teach and preach at the universities, to build churches and cathedrals, and astonish the world by their skill and learning. Who can tell what services they rendered to their nation and to all mankind by pouring forth that ceaseless stream of intercession day and night for the averting of the judgments of Divine wrath which the crimes and follies of men so richly deserved? "What the sword is to the huntsman prayer is to the monk," says St. Chrysostom, and well did they use the weapon for the spiritual and material benefit of all. Another great benefit they conferred was that of charity. They were the true nurses of the poor. There were no poor laws and union workhouses and hospitals. The monks managed to supply the wants of all who suffered from poverty, privation and sickness. "The friendship of the poor constitutes us the friends of kings," says St. Bernard. Among other services they honoured "the nobility of labour, the long pedigree of toil," working in their fields and promoting the study of agriculture. They cultivated learning and knowledge, absorbed nearly all the social and intellectual movements of the age, pouring forth works of erudition, history and criticism, recording the annals of their own time (as in your own Abingdon chronicle), and stored their priceless records in their libraries, which have done such good service to the historians of modern times.

We have seen your abbey growing in wealth and importance. But like all other great institutions it had to pass through periods of storm and stress. The eighth century was one of those periods. Your town stood in the old kingdom of Wessex, on the borders of the rival kingdom of Mercia. War broke out between these rival sovereignties, and important battles were fought in this neighbourhood. In 752 Cuthred, king of Wessex, gained a decisive victory at Burford over Ethelbald, king of the Mercians. Twenty years afterwards Offa of Mercia defeated Kynewulf of Wessex at Bensington, and Abingdon suffered severely by their military operations. Another calamity was the inroads of the Danish hosts of wild barbarians, who slew men and women and destroyed and plundered wherever they went. At length they came to the holy and venerable house of the monks at Abingdon, and left nothing but the bare walls standing. The shrines were pillaged, and sacred vessels melted down to make bracelets for pagan deities. It seems strange that Berkshire folk should speak evil of King Alfred, the darling of the English, whose millenary England is about to commemorate. But he pleased not the monks of Abingdon, and is compared by the chronicler to Judas for taking away from the monastery the government of the town. The monastery arose from its ashes in increased magnificence; the monks returned from their wanderings, and the zeal of kings and nobles exhibited itself in more profuse liberality. But at the period of anarchy caused by the Danish wars the religious spirit of monasticism languished, and worldliness crept in and destroyed the zeal and devotion of the monks. But better times were in store for the fortunes of the house. A reformer was needed; the hour brought the man.

At the Court of Athelstan there was a youth named Ethelwold, who attracted the king's attention by his nobleness and worth, and was placed for his education with Alphege, Bishop of Winchester. In the course of time he was sent to Abingdon, which was almost a ruin materially and morally. A fresh band of monks was attracted by his worth and zeal, and he restored the monastery to its former state. It is not too much to say that Ethelwold, abbot of Abingdon, together with Dunstan and Oswald, effected such a monastic reform that the system was saved by them, and became again a source of benefit to mankind. This saintly artist wrought with his own hands many ornaments for the sanctuary, a reredos containing figures of the twelve apostles in gold and silver, a high altar, a wheel full of bells to be chimed on festivals, twelve suspended lamps and countless silver bells, and three silver crosses each 4 feet high. He rebuilt the church, and sent Orgar abroad to learn singing in order to teach the brethren the right way of conducting the service. He gave a noble chalice, three gold and silver cups and many other ornaments, and a silver tablet worth 300*l*., which remained to the days of Abbot Vincent. The monastery was not, however, purged of all its bad characters, as two false monks carried off all they could lay hands on of gold and silver, and made off to Normandy with their booty. The same abbot constructed the mill stream for the abbey mill, and deepened the channel of the river. So Abingdon owes much to the holy abbot St. Ethelwold.

Abingdon had some years later another skilled goldsmith, one Sparhavoc, who, it is said, was commissioned by William I. to fashion a royal crown, and unhappily decamped with the materials. But he was at that time Bishop of London, so Abingdon has no share in his disgrace. Perhaps he was a loyal Saxon, who had scruples about making a crown for the Conqueror, and regarded the gold as some recompense for the fair lands which the Norman freebooters had wrested from the English. The chronicler records with pride the many gifts which flowed into the monastic treasury, of the gift in 1015 of a casket of relics, a copy of the gospels bound in gold and silver, with a silver cup and a priest's vestments, by a noble lady, Eadfleda; of the gift by Canute of a casket of gold and silver containing the relics of St. Vincent of Spain, and two large statues, of Athelwin's casket and cup of silver, and relics of St. Edward, king and martyr. Edward and his queen came to visit the abbey, and finding the boys attending the monastic school dining in poor fashion off bread, the queen in pity asked permission of her husband to give her property at Lewknor in order to provide more liberally for their maintenance, with which the king readily complied. Odric, who succeeded Sparhavoc (of William's crown fame), gained some privileges from Edward the Confessor, and he made a new cut from a little above the town to just below the bridge in order to facilitate navigation, and as an acknowledgment of this service every boat passing through had to pay the cellarer of the abbey 100 herrings.

The Norman Conquest wrought much evil here. The men of Abingdon and its abbey fought against William, were surrounded and suffered severely, the abbot himself (Aldred) being imprisoned in Wallingford Castle, and the unscrupulous Normans did much mischief in the abbey. One Athelhelm, a Saxon in name but educated in Normandy, was appointed abbot by William. The choice was a wise one, as he was acceptable to both his English and Norman neighbours. He was a friend of Robert d'Oyley, of Wallingford and Oxford, and frequently stayed at the abbey. On one occasion the wily baron fairly talked the abbot out of the possession of Tadmarton, to the grief and consternation of the monks. Subsequently d'Oyley had a terrible dream of his being accused before a queen in a royal palace, and of his being smoked with burning hay by some ill-behaved boys. This so troubled him that he restored the property to the abbey. I have always understood that Prince Henry, afterwards Henry I, was educated here, and was so well taught by the monks that he earned the name Beauclerk. It is strange, if this were true, that the chronicler should have omitted to mention this fact. The prince certainly kept Easter here in 1087, and perhaps this visit gave rise to the tradition.

The Norman period was renowned for its church building, and here in Abingdon Norman builders were at work. In 1091 they began to enlarge the old abbey church built by Ethelwold. Unfortunately they imprudently meddled with the foundations of the tower, and on Friday morning, March 28, as the monks were going to sing matins, the tower fell with a loud crash, putting out the lights which the monks were carrying in procession; so they all fell to the ground, expecting death, but happily no one was hurt. So the work of building was postponed till after Easter, when they made a fresh start. Some of these abbots of Abingdon were very vigorous defenders of the rights of their abbey. On one occasion when the king's bailiff had dared to cut wood in Bagley Wood, Abbot Athelhelm pursued him on horseback, and made him wade through the river Ock up to his neck; and on another occasion, when the bailiff took the abbey oxen to do the king's work, the abbot upset the waggons, took back the oxen, and thrashed the bailiff with his own staff. This abbot was succeeded by Rainald, who was in favour with William Rufus, and he was followed by Faritius, an Italian of great ability and learning, who set about rebuilding the monks' lodgings and enlarging the church. Amongst the Verney papers were discovered the accounts of the monks of your abbey, which have been published by the Camden Society and are full of interest. I find that 383 quarters of malt were assigned to the cellarer to brew for the convent, its ale being evidently great in quantity and good in quality. Three barbers received 30*s*. a year for shaving. There is a great expenditure in building, and Simon the glassmaker is well rewarded for his pains.

And now another power entered upon a long-continued struggle with the autocratic rule of the abbots. I mean the power of the towns. Evidences of this struggle are observable all over England, and especially in places, as in Abingdon, where the burghers with their guilds, who were striving for freedom, were confronted with a powerful abbot, who for centuries had had dominion over them. These good burghers (of course unlike the present inhabitants) were very pugnacious, very quarrelsome and very eager for their rights. They forgot all the services which a great abbey had rendered them in the past, which had raised their town to a position of eminence and importance. The abbot forgot that the children whom he had brought up, scholared and ruled were growing up into man's estate, and chafed at his discipline. So everywhere there were signs of growing discontent; everywhere the struggle for freedom was going on. The first evidence at Abingdon was a great stir to get rid of the toll levied on the Oxford boats of 100 herrings, but this failed. Then the good burghers wanted to hold free market. This began in the time of Abbot Vincent, who gained the ear of Henry I., and by a judicious expenditure of 300 marks (to pay which he had to strip the tablet of St. Ethelwold of its gold and silver ornaments) maintained the rights of the abbey. The struggle was renewed in the time of Henry II., and the men of Wallingford gained the king's ear, and armed with his authority marched to Abingdon and strove to stop the abbot's market, but the abbot's men could not stand this, plucked up courage and ignominiously drove out the men of Wallingford. Then the matter came before a jury, and there was much swearing and counter-swearing and much money expended by the abbot, but he won his cause in the end, and the chronicler considers that the money was well spent, and that the abbot could do no less than defend the rights of his monastery. The struggle was renewed in 1327, when the abbey was ransacked by the townsfolk, assisted by the scholars of Oxford, who were, according to Anthony à Wood, of a desperate condition and glad of any diversion rather than study—a reputation which we trust they have long since lived down. On account of this outrage twelve persons were hanged and sixty others condemned to various punishments. In 1431, while Henry VI. was in France, a formidable insurrection broke out under William Mandeville, the object of which was to level all distinction of class and privilege. Mandeville was the Socialist of his day, and he had a special enmity against the clergy, "whose heads were to be made as cheap as sheep's heads, three or four a penny." The Duke of Gloucester hastened to Abingdon to make peace, seized Mandeville and made his head somewhat cheap by hanging him. There is much to be said of the activity of Abingdon men in the Middle Ages for the improvement and development of their town. They founded a Guild of the Holy Cross in the time of Richard II. (of which we have previously heard), built bridges, a hospital, set up a beautiful market cross, which stood on the site of the present county hall, erected in 1677 from designs by Inigo Jones.

The monuments in your churches tell us of the fame of your prominent citizens of ancient days, of Geoffrey Barbour, merchant, in the fifteenth century, Sir John Mason, John Roysse, the founder of your famous school, and many other men renowned in the annals of Abingdon. Abingdon must have had her own poet in Mediæval times, for we find a remarkable set of verses composed by a monk on the building of your bridge in 1416, and hung in Christ's Hospital. In 1262 Robert de Hendred used the mitre for the first time, and is said to have been the first abbot to enjoy that privilege, which gave him a seat in the House of Lords. Of the later abbots the only one of distinction is John Sante, ambassador with Rome, in the reigns of Edward IV. and Henry VII. He and his successors rebuilt the central tower and body of the church and added the tower at the west end. At length the decree for its suppression went forth. The last abbot, Thomas Pentecost, elected in 1514, on February 14, 1539, with the rest of the community, signed the surrender of the monastery, and for his complacency was allowed to keep the manor of Cumnor, value 223*l.* per annum, and a pension. The gross rental of the abbey was 2,042*l.* a year. A pension ranging from 22*l.* to 2*l.* 13*s.* 4*d.* was given to the monks, and the rest went to swell that heap of spoil which enriched an avaricious king and his greedy favourites. Of its buildings we have but scanty remains. Leland (Henry VIII.) saw the abbey and describes it as a magnificent pile. The chief feature of all that remains is the western gateway. In the fifteenth century it was visited by William of Worcester, who has recorded for us the principal measurements of the church. His plan shows the whole length to be 460 feet.

We have seen the town increasing its power and measuring its strength with its ecclesiastical lord, but when the abbey was destroyed the burghers found that his removal was not quite an unmixed blessing to them. Their town suffered enormously and so a charter was granted, the predecessor of eight others, which helped the good burghers to renew their prosperity. The Civil War period was a trying time for Abingdon folk. Prince Rupert came here with his army in 1642, and he stayed at "The Unicorn" (pulled down). On his departure Lord Wilmot was left in charge of the town, but on the approach of the Parliamentary army he cowardly retreated to Oxford and left it to his enemies. The Earl of Essex entered Abingdon on May 16, 1644, with 10,000 men, followed by Sir William Waller, and in one short day destroyed much of the loveliness and glory produced in so many years. The soldiers pulled down the beautiful market cross, riddled the windows of the church with bullets and burnt the tables and chessboards of the people. Several attempts were made by the Royalists to regain the town, which being so near Oxford was a continual thorn in the side of the garrison of that city. In one of these attempts Sir Henry Gage was killed by a stray bullet at Culham Bridge, when he was endeavouring to rescue the town.

Mr. Challenor's book on the "Records of the Borough" abounds with interesting details of the inner life and progress of the town, and tells us much about its chief men. There is another work recently published by Mr. Compton Reade, "A Record of the Redes," which tells us much about a family which was long connected with your town. Thomas Rede acquired the ancient palace of the abbots of Abingdon, otherwise called the King's House, at Barton, because the sovereign could claim hospitality of its owner, by purchase from Sir Richard Lee in 1550. There is, or was, the Rede aisle in St. Helen's Church, and over the south porch there is a shield with "T. R." (Thomas Rede). At Barton Court Sir Thomas entertained Charles I. and his queen on three occasions, and their historic mansion witnessed the final farewell of the royal couple. It was the scene of a Royalist attempt to recover Abingdon. In one of the Civil War tracts a letter from Colonel Payne to General Browne, parliamentary governor of Abingdon, states that the enemy came between Thrupp and Norcot to Barton House, where they kept covert till daylight, and lay still after ravalue (reveille) was beaten. Then General Browne "had a design to smoke them out," which was carried into execution. Cannonballs played on the massive walls of the old abbot's palace (as late as forty years ago balls were extracted from the ruins); then fire was employed, and the timbers of the farmhouse, erected in Charles II.'s time, show marks of bullets. Thus the old house perished, but not the memory of Sir Compton Reade's troop of horse and gallant defence of his ancestral home. A glance at the names of your streets recalls some interesting associations. There is Stert Street, which takes its name from the Stert river, which formed the mote of the abbey and flowed under St. Nicholas's Church, which stood on arches. There is St. Edmund Street, named after one of Abingdon's most famous sons, St. Edmund Rich, Archbishop of Canterbury, born here in low estate in 1195. Then there is the vineyard, where the monks grew their grapes. I wonder whether the sun in England was warmer in those days than now, as grapes grown in the open air now seldom ripen.

TESSERÆ.

Fuseli and Shakespeare.

EARLY in 1779 Fuseli came back to London with his mind strengthened in knowledge, and his hand improved in its cunning. With the reputation of an eight years' residence in Rome upon him, he commenced his professional career, and the beginning was auspicious. Thus stood art at that time in England. Reynolds excelled all men in portraiture, and wrought unrivalled and alone. Wilson and Gainsborough sufficed for the moderate measure of public demand in landscape. Barry and West shared between them the wide empire of religious and historic composition, and there was nothing left for Fuseli save the poetical. Nature had endowed him eminently for this field, and the nation showed symptoms of an awakening regard for it. No preceding painter had possessed himself of the high places of British verse. The enthusiasm for Milton, and especially for Shakespeare, was warmer and also more intelligent than at any former time, and Fuseli was considered by himself and by many friends as destined to turn this state of opinion to excellent account. His rising fame, his poetic feeling, his great knowledge and his greater confidence now induced Fuseli to commence an undertaking worthy of the highest genius—"The Shakespeare Gallery." An accidental conversation at the table of the nephew of Alderman Boydell started, it is said, the idea, and West and Romney and Hayley and Fuseli shared in the honour. To the mind of the latter, indeed, such a scheme had been long present. It dawned on his fancy in Rome, even as he lay on his back marvelling in the Sistine, and he saw in imagination a long and shadowy succession of pictures. Boydell supported the plan anxiously and effectually. On receiving 500*l.* Reynolds entered, though with reluctance, into a scheme which consumed time and required much thought; but Fuseli had no rich commissions in the way. His heart was with the subject. In his own fancy he had already commenced the work, and the enthusiastic alderman found a more enthusiastic painter, who made no preliminary stipulations, but prepared his palette and began. Shakespeare presented a whole world to the eye of art, and to embody the whole or any considerable portion of his visions would demand a combination of powers not to be hoped for. As might have been expected, Fuseli grappled with the wildest passages of the most imaginative plays, and he handled them with a kind of happy and vigorous extravagance, which startled common beholders. The "Tempest," the "Midsummer Night's Dream," "King Lear" and "Hamlet" suggested the best of the eight Shakespearean pictures which he painted, and of these that from "Hamlet" is certainly the noblest. It is, indeed, strangely wild and superhuman; if ever a spirit visited earth it must have appeared to Fuseli. The majesty of buried Denmark is no vulgar ghost such as scares the belated rustic, but a sad and majestic shape with the port of a god. To imagine this required poetry, and in that our artist was never deficient. He had fine taste in matters of high import; he drew the boundary line between the terrible and the horrible, and he never passed it. The former he knew was allied to grandeur, the latter to deformity and disgust. An eminent metaphysician visited the gallery before the public exhibition. He saw the "Hamlet's Ghost" of Fuseli, and exclaimed, like Burns's rustic in "Halloween," "Lord preserve me!" He declared that it haunted him round the room. The paintings which composed the Shakespeare Gallery were supplied by various hands; the plan was new, and novelty seldom fails to attract the multitude, but the multitude cannot be supposed to have much sympathy with works of a purely poetic order. Much as the Shakespeare Gallery was praised, its excellence, therefore, was not felt by the people at large. The superiority of Fuseli in poetic conception over all his compeers was, however, appreciated by the few on whose approbation alone he placed any value.

The Bavarian Walhalla.

The beauty of Grecian temples was confined almost entirely to the exterior, there being no architectural display of any kind within, or very little; but the interior of the Walhalla is of most striking splendour—most sumptuous in point of decoration, and highly original in its design, which exhibits great happiness of invention. Here Klenze shows himself not an imitator of the ancients, but their rival—their pupil, but also a master in his art. His building consists chiefly of a single hall (150 by 57 feet), with a space answering to the opisthodomos of an ancient temple at its north end, but separated from it only by a screen of Ionic columns, which order is continued throughout in the antæ at the angles of the massive piers, which divide the hall into three compartments. The entire length of the interior therefore becomes 175 feet, and though there was nothing to prevent the whole being laid into one uninterrupted space, the division serves to give the idea of greater extent, and greatly enhances the perspective effect. The same may be said with regard to the piers, whose boldly projecting masses break up what would else have been the too great monotony of the plan, and produce a pleasing succession of parts. Besides being of essential service in supporting the roof, these projections act in some measure as screens, and prevent the disagreeable formality that would attend the ranges of so many busts all of the same size on each side, if they were all exposed to view at the same time. What more than anything else gives the whole of this interior a decidedly original and unborrowed architectural character is the construction and decoration of its roof, and the mode in which the light is admitted through it. According to the original design, it was intended that there should be a vaulted and coffered ceiling; yet, as that would have been too much at variance with the strictly Grecian character of the exterior the architect afterwards conceived the idea of omitting ceiling or internal roof altogether, and adopting a single or open roof without masking of any kind. There is, therefore, no contradiction between its external and internal form, and the latter becomes highly expressive of the first, and is made to repeat one of its most beautiful characteristics, namely, the pediment, which feature is obtained within the building by the inclined sides of the roof and the horizontal beams carried across from the opposite piers. Besides their expressive form and the effect attending a series of them, these internal pediments are rendered exceedingly decorative, their faces being divided into panels filled in with rich open-work arabesques and figures in white and gold, partly relieved with colours. The ceiling itself is of dazzling splendour, being almost entirely lined with plates of gilt bronzes, and with gold stars and other ornaments on an azure ground in its coffers. Through this the light is admitted from a skylight or opening over each compartment of the plan, which follows the form of the roof, and is filled with sheets of plate-glass framed in bronze. Thus the whole is most effectively and beautifully lighted within, without either windows in the walls or lanterns on the roof.

The "Aldobrandini Marriage."

This celebrated ancient wall-painting was discovered in Rome near the arch of Gallienus, in the pontificate of Clement VIII, and it was called, from its original possessor, Cardinal Cintio Aldobrandini, the *Aldobrandini Marriage.* The subject, which in this respect, as in all essentials, corresponds with the *Ara* in the vestibule of the Casino in the Villa Albani, is the nuptials of Dionysos and Cora. The former is in the present instance seated on the ground in an attitude of impatience, while on the *Ara* of the Villa Albani he supports himself against the trunk of a tree. The ivy crown and the character of divinity in the expression clearly indicate the great god of nature, to whom also reference is made by the border of vine leaves with which the picture was surrounded at the time of its discovery. The timidity and indecision of the veiled bride, who sits upon the cushion, form a striking contrast to the fiery passionateness of the bridegroom. The goddess, crowned with myrtle, loosely attired, but likewise adorned with a veil, who addresses her, and endeavours to induce her to take the decisive step, appears to be Aphrodite herself, to whom corresponds a female figure leaning against a pillar, richly adorned with jewels, and who is dropping balsam into a vessel in the form of a shell. She appears to be Peitho, the goddess of persuasion, whom we always find in the train of the goddess of love. To the left are three females, who may be supposed to be the Graces, busied about a basin, which stands ready for the bath; and to the right are three corresponding figures grouped round an altar bearing the form of a candelabrum. As one of them plays the lyre, they have been, with some reason, supposed to be the Muses, who on similar occasions appear in threes. The composition of this picture is grandly conceived and distributed; the material reproduction is, however, that of a mere mechanical artist, which explains why in later times this work has been underrated, whilst the great artists of the seventeenth century were filled by it with the most enthusiastic admiration. Nicolas Poussin even copied it, and this copy, which is preserved in the Doria Gallery, affords a convincing proof that he knew how to appreciate and, as it were, unconsciously conjure up anew the beauties of the original picture, which we here see but in reflection. It might be highly instructive to make the comparison between this copy and the faded and artificially restored fresco. By such a mode of study alone can we learn to separate what is merely accidental in the mode of transmitting to us an ancient work from that which belongs to the intellectual conception and treatment of the original artist. Thus only can the study of ancient works be productive of any real advantage, without which it is better to keep entirely aloof from them.

Creation in Art.

Artistic creation is a mental activity which reduces confused presentations of thought and feeling to such clearness that the thought may be assimilated by, and the feeling communicated to, other people. The process of creation, one common to all men, and therefore verifiable by all from inner experience, is effected thus:—A man surmises, or feels confusedly, something perfectly new to him which he has never heard of from others. This novelty arrests his attention, and in simple conversation with those about him he points out what he perceives; to his surprise he finds that the matter so clearly visible to him is quite invisible to the others. They do not see, do not feel what he would impart to them. This strange thing, this discord, this disunion from his fellows at first disturbs him, and to test himself the man strives to impart from new points of approach his feeling, his understanding. But still people do not comprehend what he seeks to impart to them, or else they understand and feel it otherwise than as he himself does. And a thought begins to agitate the man, a doubt as to whether he is surmising, groping after an unreality, or whether others fail to see, to feel, a reality. To solve this difficulty the man strains his whole strength to make his discovery clear to himself, so that there may not remain the least doubt, either for himself or for others, as to the reality of what he perceives. So soon as this elucidation is completed, and the man himself no longer doubts the existence of what he sees, understands, feels, then at once others are made to see, understand, feel with him. Thus the effort to clarify and assure for himself and others the confused and obscure presentations of his mind is the medium for producing the results of man's general mental activity, or of what we call works of art—which widen man's horizon, compelling him to see that which was before unseen. Here is the function of the producer of art-objects, and to this function is related also the emotion of the recipient, which has its basis in the faculty of emulation; or rather, in a property of contagion, and in a certain hypnotism. The artist's stress of spirit in making clear to himself the subject of his inner conflict is transmitted through the work of art to the recipients. The work of art is a finished product where it is presented to others with such lucidity that it calls forth in them the feeling which the artist himself experienced in its creation. A new idea formerly unperceived, intangible, unintelligible, now wrought through stress of feeling to such a degree of lucid expression as to become accessible to all—this is a work of art.

The Positive and Relative in Painting.

The means employed in the art of painting, however powerful and characteristic, are, nevertheless, so limited that in depicting any object or scene in nature it is necessary for the artist to select those features which shall give the best idea of the whole; nor is it possible by the mere imitation of details to arrive at a true rendering of the impression that nature makes on the mind of the spectator. Our mental faculties, though necessarily depending on the senses for the materials of thought, commence their operation after that of the latter is finished, and from the facts seen create the image. That image art alone can embody, and could we, by any amount of labour, or by any instantaneous process (like photography), render every minute detail we see, we should find that there would still be wanting that particular quality which art alone can supply, and that the copy, however outwardly correct, would give no idea of the character of the original, but would be dead and soulless. For true art consists in seizing the spirit of the scene to be represented, and only imitating so much of the form and colour of its details as shall best satisfy our sensuous perception of the truth of the representation. Every part of the scene should be rendered, as far as possible, with that degree of literal truth (no more, no less) which strikes the eye on looking at the whole. The assertion that because, by turning the eye from the object at first and most earnestly rested on, the mind is then equally satisfied of the literal truth of another object in the same scene, and that therefore the same result should be attained in a picture is utterly incompatible with the practice of the art. For in that change of view the spectator loses his first impression of the character of the scene, and though the painter may make each part true in itself, it will be thoroughly false in relation to the whole. For, remember, to the artist every object has two aspects: the one, positive, as seen by itself—the other, relative, as viewed in connection with others; and the attempt to depict at the same time, and with equal truth, these two distinctive appearances can only result in total failure.

Window-Columns.

One of the difficulties which attend the application of columns to fenestrated composition arises from the one system requiring an almost opposite mode of treatment from the other; for while much of the beauty of an order depends on the columns being at no very great intervals apart, not more than between two or three diameters, the piers between windows ought to be of considerable width; the consequence is, either the intercolumniation must be very faulty, the columns put so far apart as to give the whole a straggling appearance, or the windows will seem to be squeezed in between them. Of this the front of the Royal Institution in Albemarle Street is a striking instance. It consists of a single large Corinthian order, the entire height of the building, well proportioned in itself and in regard to intercolumniation, yet quite disproportioned to the windows, which look both too small and too much crowded, and which are also of very poor character in themselves and have no other dressings than plain architraves, and therefore are quite out of character with the order, more especially as the columns are fluted; thus the grandeur aimed at by the order is neutralised by the poverty and littleness of the rest. If there must be both windows and columns there should be consistency of character; not only does each order require a different mode of decoration for the windows, but the different examples of the same order do also. The florid Grecian Ionic, for instance, requires a more ornate style for windows than the plainer specimens of that order. Yet so little attention is paid to the proportion of decoration that windows of the same character and design are generally employed indiscriminately for all orders, nor is it by any means uncommon to see windows of the plainest description, or even without any dressings or attempt at architectural expression, mixed up with Corinthian columns.

Sir Antonio More.

The reign of Mary, though shorter even than that of her brother, makes a considerable figure in the annals of English painting. It was distinguished by more good painters than one, the principal was Sir Antonio More. He was a native of Utrecht and scholar of John Schorel, but seems to have studied the manner of Holbein, to which he approached nearer than to the freedom of design in the works of the great masters that he saw at Rome. Like Holbein he was a close imitator of nature, but did not arrive at his extreme delicacy of finishing; on the contrary, Antonio sometimes struck into a bold and masculine style, with a good knowledge of the chiaroscuro. In 1522 he drew Philip II., and was recommended by Cardinal Granvelle to Charles V., who sent him to Portugal, where he painted John III, the king, Catherine of Austria, his queen, and the Infanta Mary, first wife of Philip. For these three pictures he received 600 ducats, besides a gold chain of 1,000 florins and other presents. He had 100 ducats for his common portraits. But still ampler rewards were bestowed on him when sent into England to draw the picture of Queen Mary, the intended bride of Philip. They gave him 100*l*., a gold chain and a pension of 100*l*. a quarter as painter to their majesties. He made various portraits of the queen; one was sent by Cardinal Granvelle to the emperor, who ordered 200 florins to Antonio. He remained in England during the reign of Mary, and was much employed; but having neglected, as is frequent, to write the names on the portraits he drew, most of them have lost part of their value by our ignorance of the persons represented. The poorest performers have it in their power to add so much merit to their works as can be conferred by identifying the subjects, which would be a little reparation to the curious world, though some families should miss imaginary ancestors. On the death of the queen, More followed Philip into Spain, where he was indulged in so much familiarity that one day the king, slapping him pretty roughly on the shoulder, More returned the sport with his maul-stick, a strange liberty to be taken with a Spanish monarch, and with such a monarch. His biographer gives but an awkward account of the sequel. A grandee interposed for his pardon and he was permitted to retire to the Netherlands, but under promise of returning again to Spain. We may suppose that he was promised to have leave to return thither after temporary banishment; and this supposition is the more likely, as Philip, for once forgetting majesty in his love of the arts, despatched a messenger to recall him before he had finished his journey. But the painter, sensible of the danger he had escaped, modestly excused himself; and yet, says the story, the king bestowed noble presents and places on his children. At Utrecht, Antonio found the Duke of Alva, and was employed by him to draw several of his mistresses, and was made receiver of the revenues of West Flanders; a preferment with which, they say, he was so elated that he burned his easel and gave away his painting tools. More was a man of a stately and handsome presence, and often went to Brussels, where he lived magnificently. He died at Antwerp in 1575 in the fifty-sixth year of his age.

GENERAL.

The First Ruskin Union Congress will be held in Sheffield on Friday and Saturday, September 21 and 22.

The Great Eastern Railway Company have purchased a site for a new station at Newmarket, which it is estimated will cost 55,000*l*.

M. Luc Olivier Merson has obtained the grand prix in the section of "Vitraux" at the Paris Exhibition.

An Exhibition Palace is in course of erection at Dusseldorf for the display of the works of art of all nations in 1902.

M. Tournaire, architect, who during three years was engaged on the exploration of Delphi, has obtained a gold medal from the International Exhibition, and has been inscribed on the roll of the Legion of Honour.

Mr. Welch, the librarian of the Guildhall, is preparing for the winter about twenty-five lectures on Old London, which he will deliver under the auspices of the University extension scheme. The first series will be given in the St. Luke's Vestry Hall on the Tuesdays in October, and the second series at the Chelsea Polytechnic.

M. Jules Chéret, the first artist who devoted great talent to the production of posters, and is therefore entitled to be ranked among the promoters of modern fine art, has been promoted to the dignity of Officer of the Legion of Honour.

Wilderspool, near Warrington, has been the scene lately of many interesting finds. Relics of Roman times have been discovered, chief among them being a number of hypocausts, the tenth of which has just been found.

The Mappa Mundi in Hereford Cathedral, which was prepared by Richard de Hardingham about A.D. 1313, is described as partly obscured by cobwebs and dust, and an examination by an expert is imperative. So ancient a document merits more care.

"The Raising of Lazarus," by Benjamin West, P.R.A., which was until lately employed as an altar-piece in Winchester Cathedral, has been purchased by Mr. J. Pierpoint Morgan, of New York, and presented to the Athenæum, Hartford, Connecticut. The painter was born in America.

M. Vollon, the French painter of still life, died a few days ago at Versailles. His pictures could always be recognised amidst a crowd of works by other painters in Salon exhibitions.

The Model of Lord Leighton's monument, which was exhibited in the last exhibition of the Royal Academy, has been temporarily placed in St. Paul's Cathedral, but its present position is not considered suitable for the monument, and obstructs the view of the tablets which are memorials of soldiers who fell in the Crimea.

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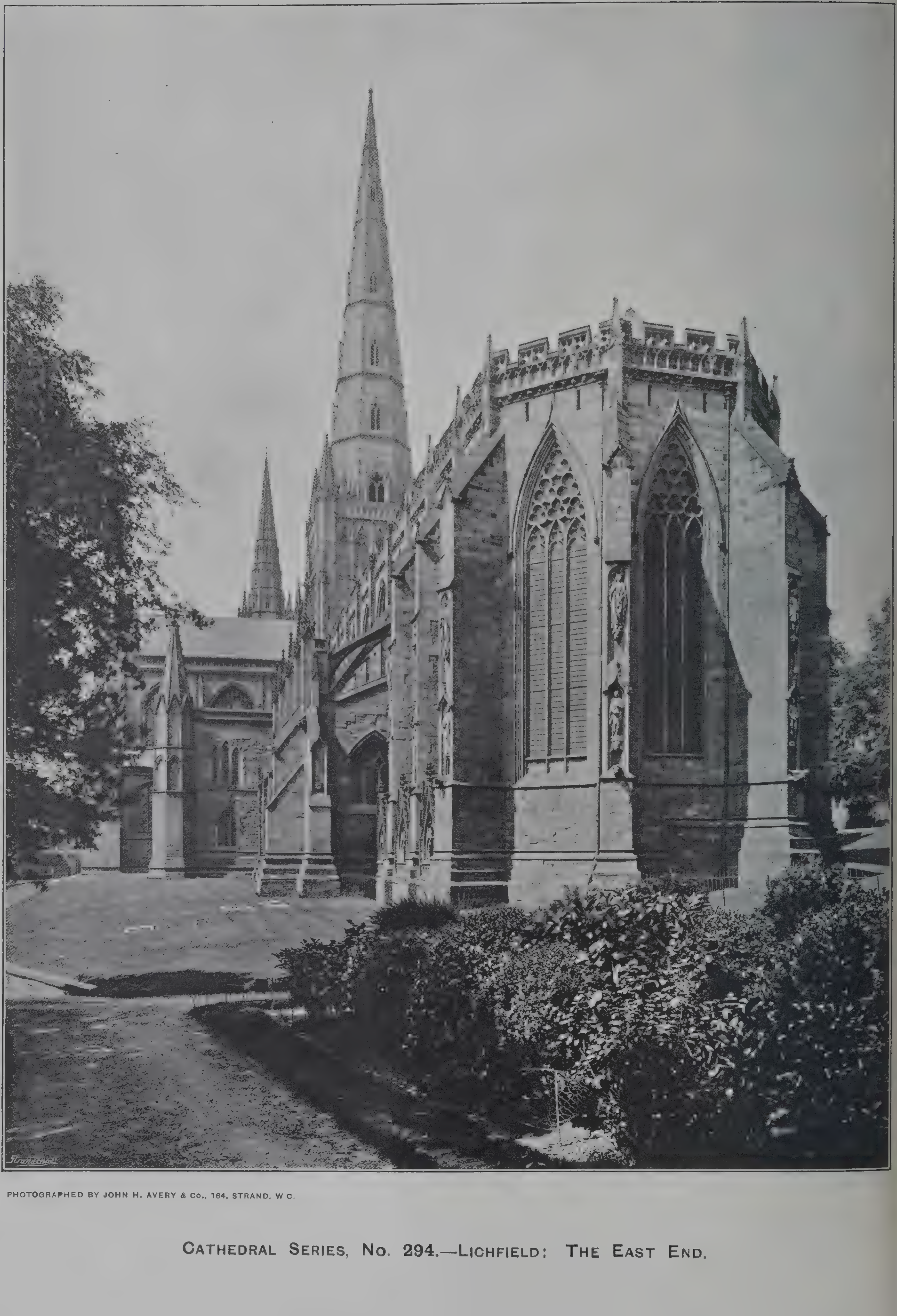

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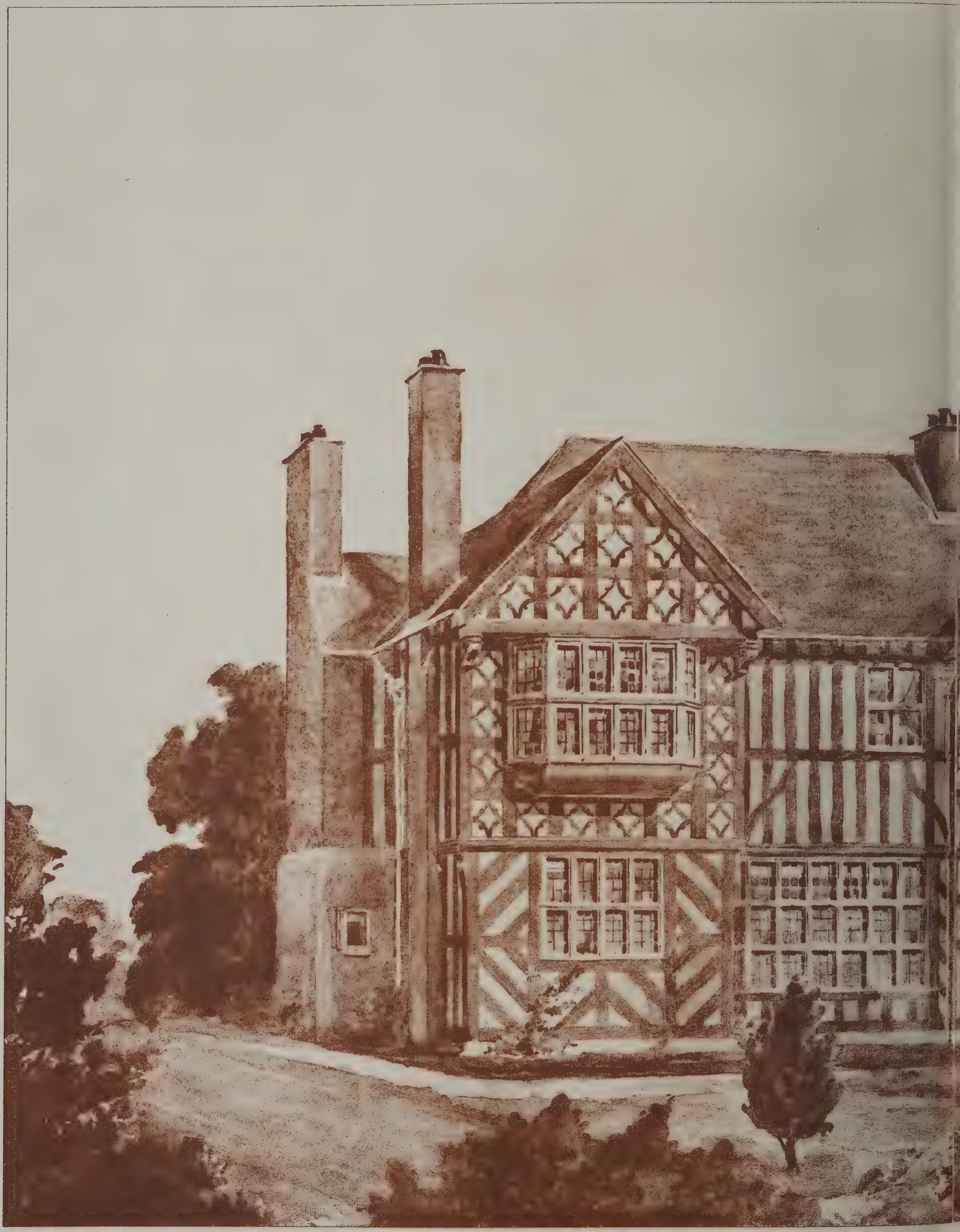

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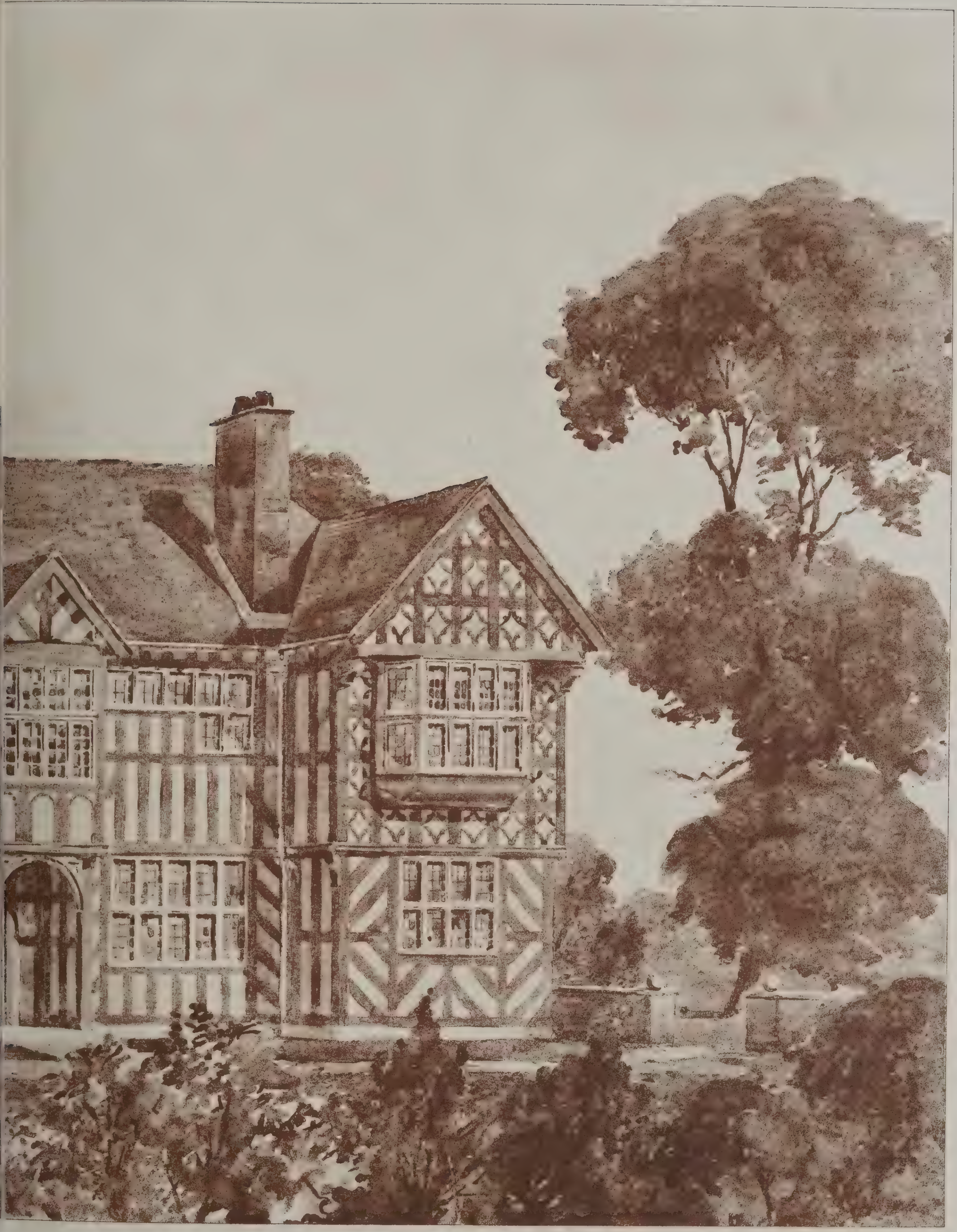

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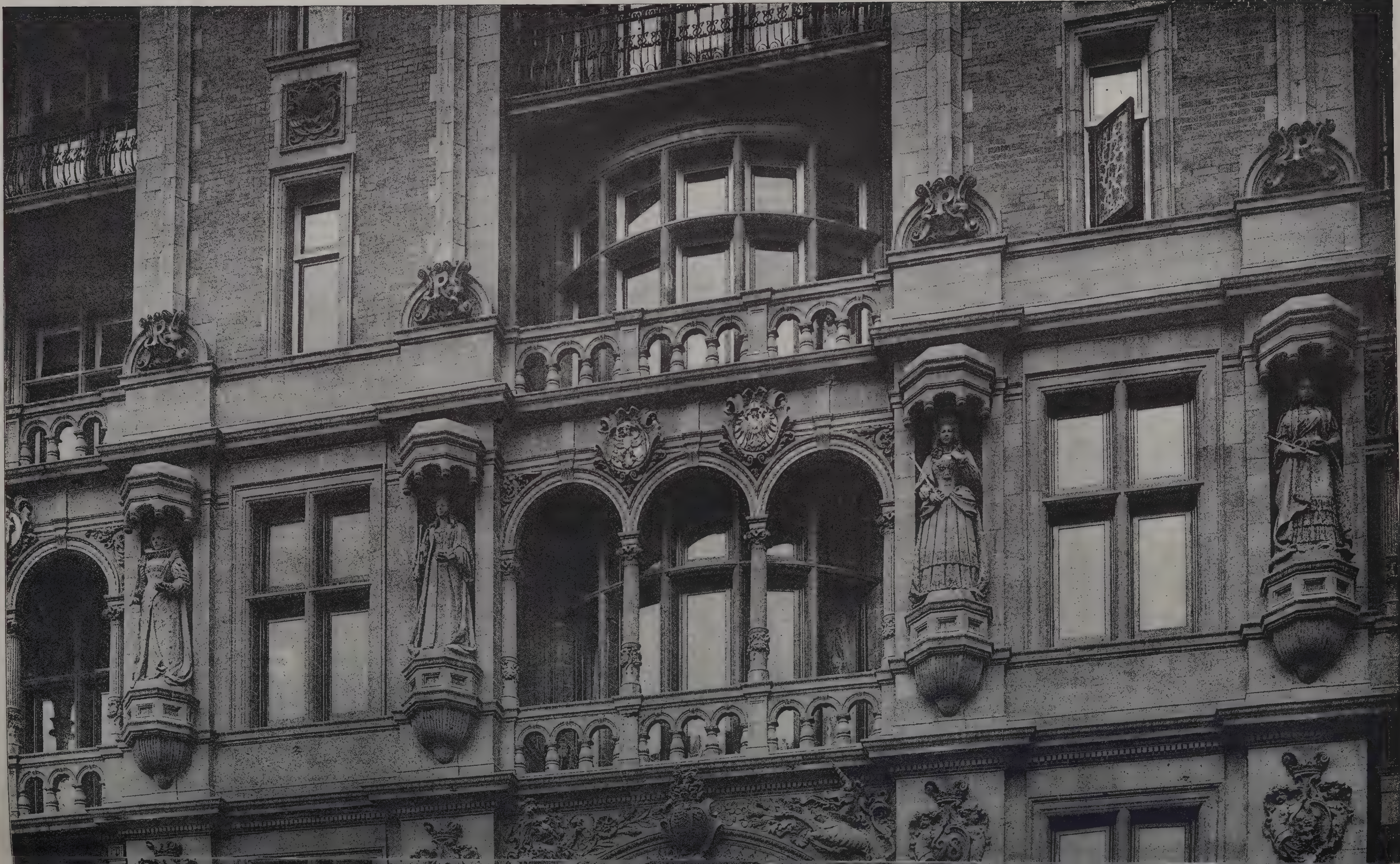

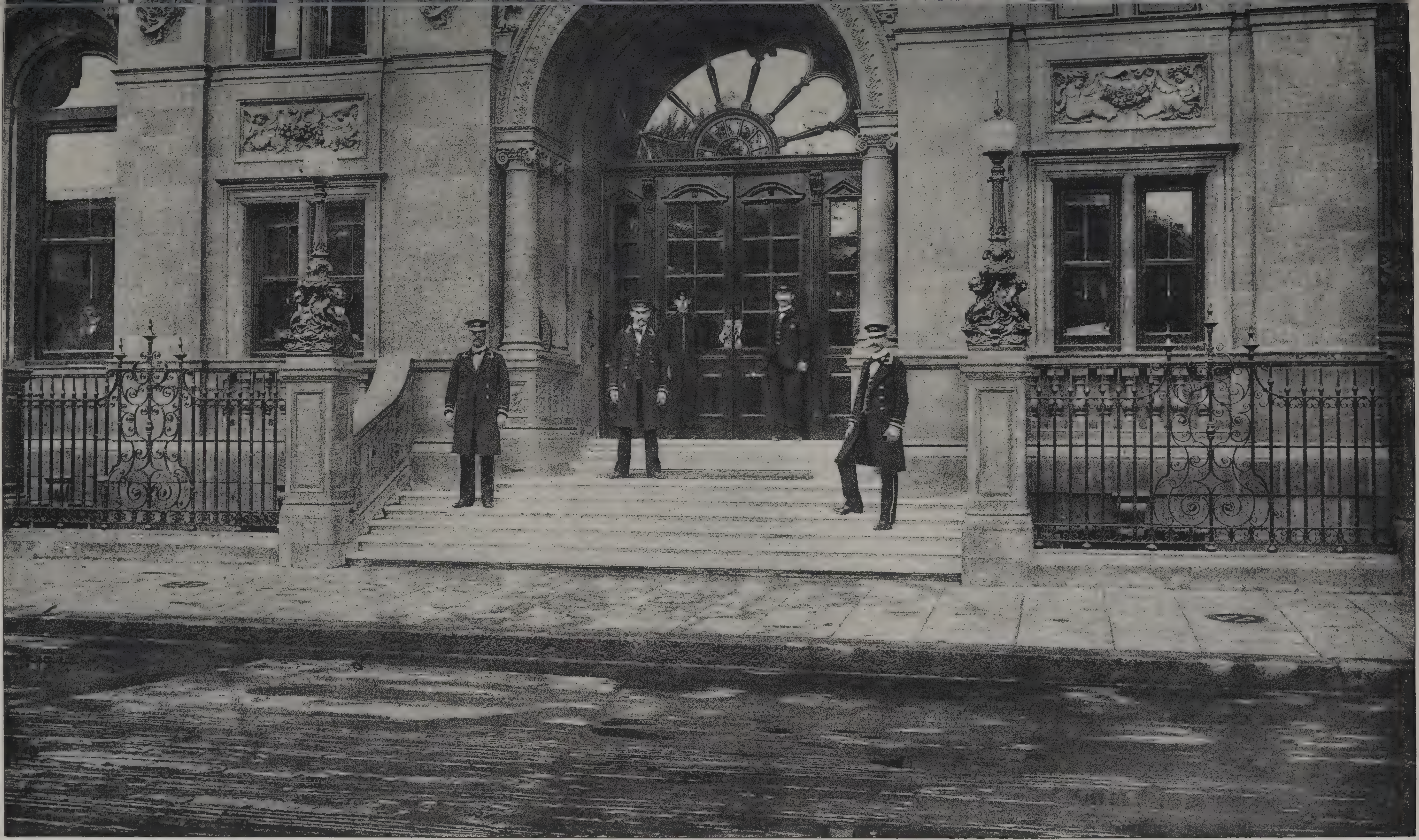

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HOTEL RUSSELL, RUSSELL SQUARE: DETAIL OF MAIN ENTRANCE.

C F. DOLL, Architect.

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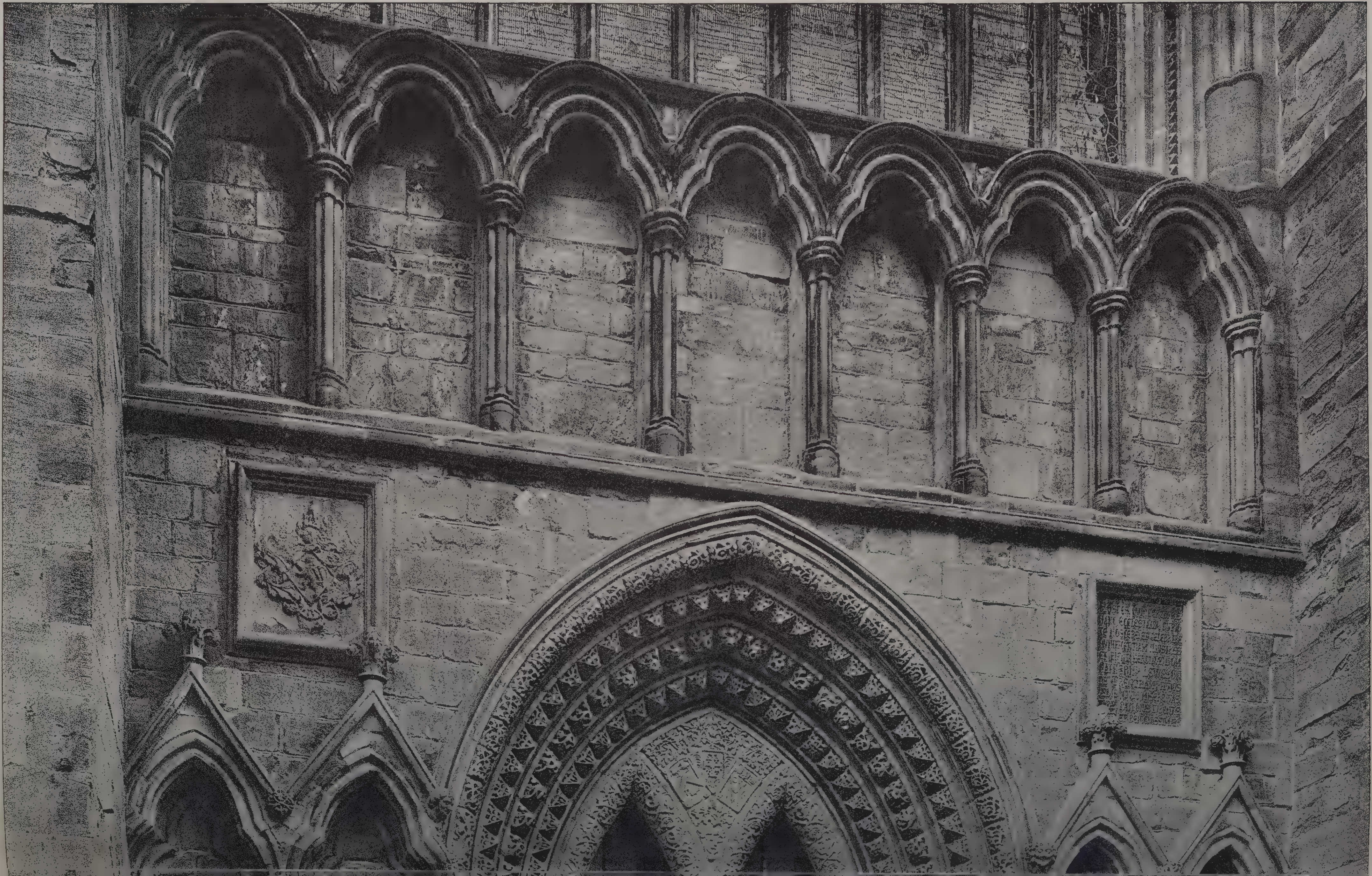

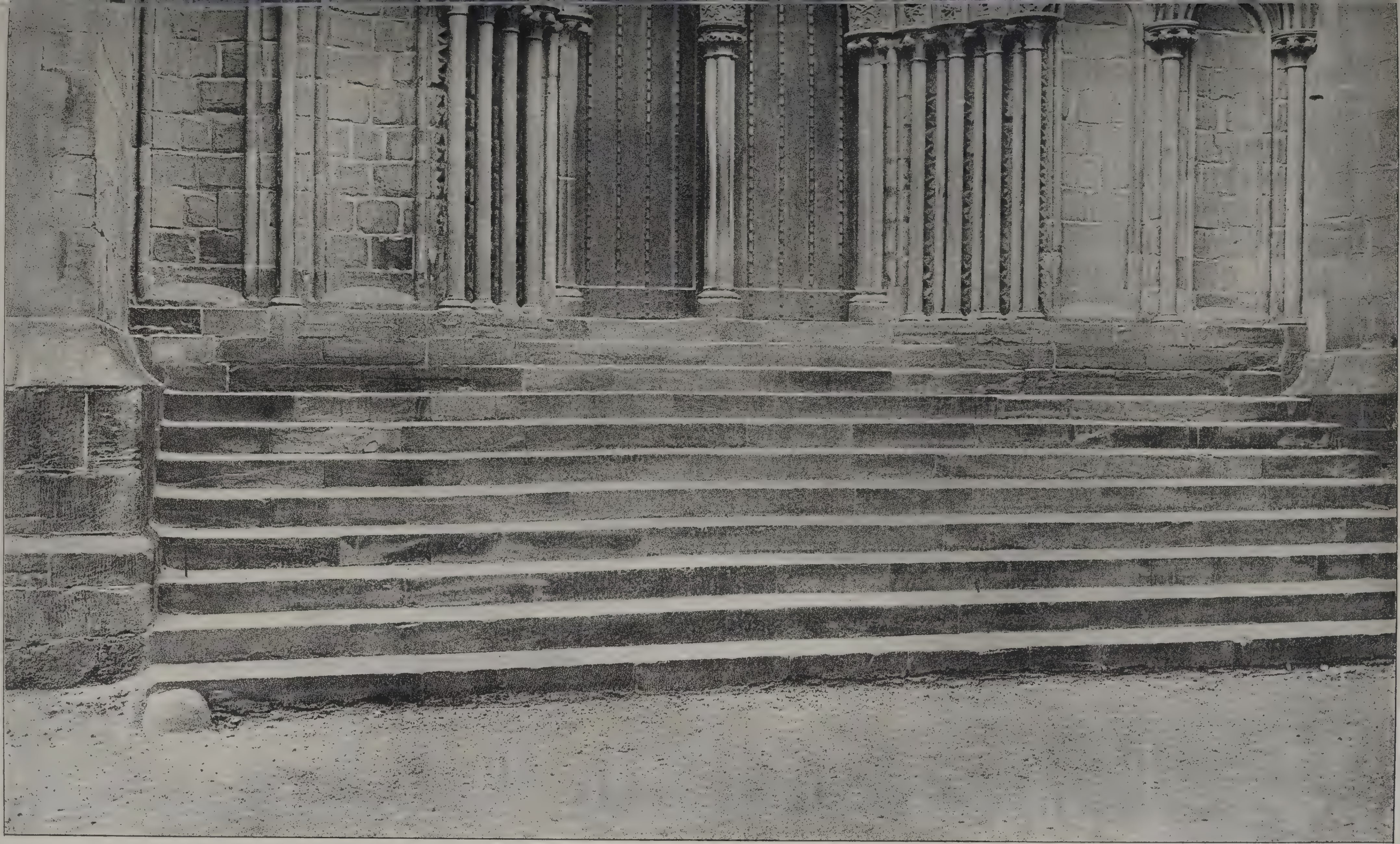

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CATHEDRAL SERIES, No. 293.—LICHFIELD: THE SOUTH DOOR.

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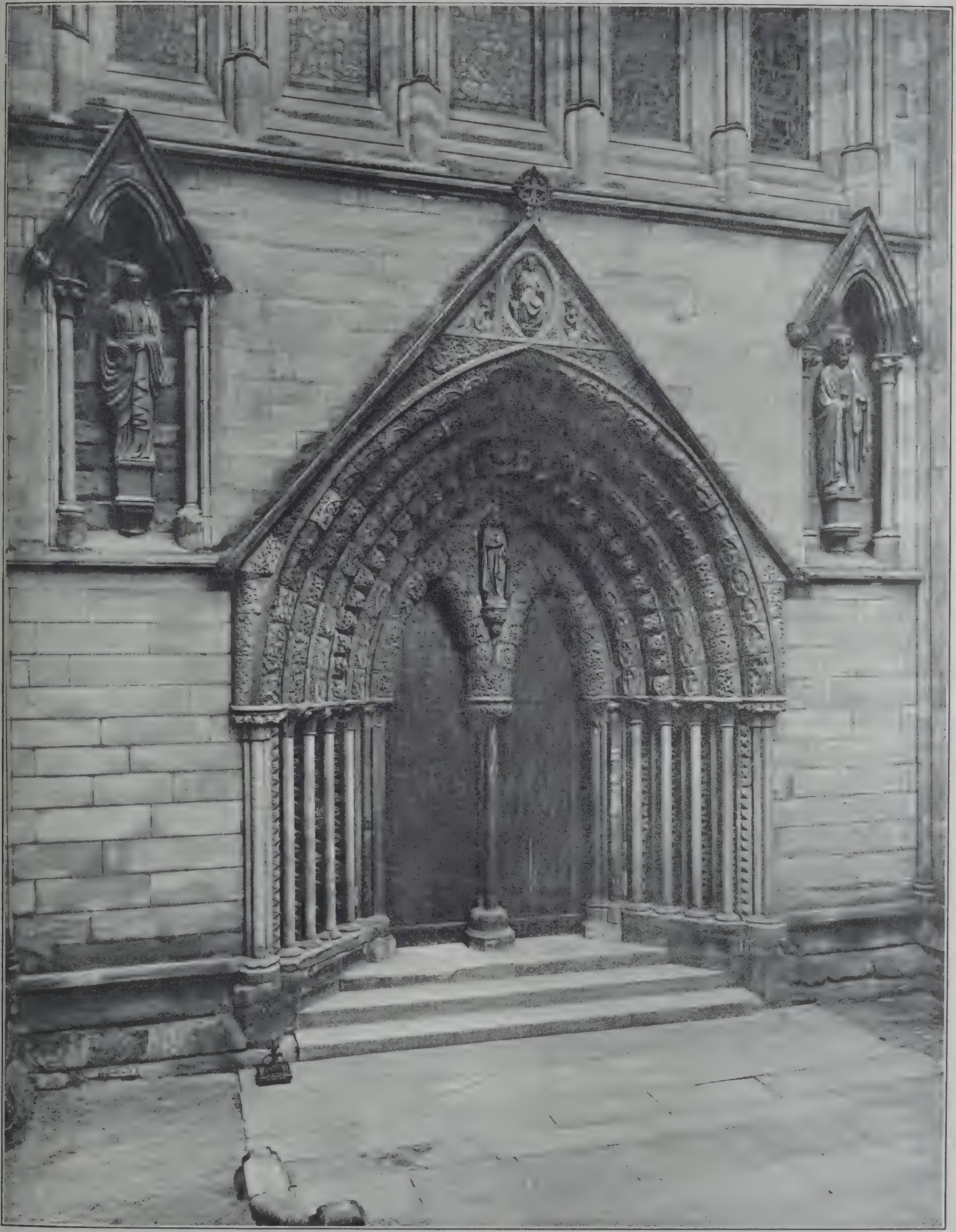

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CATHEDRAL SERIES No. 295.—LICHFIELD: THE NORTH TRANSEPT DOOR.

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The Architect.

THE WEEK.

We regret to announce the death of Mr. Edward Wyndham Tarn, M.A., which took place on the 29th ult. at Cromer after a short illness. Mr. Tarn was born in London in 1827, and was educated at University College, where he came under the influence of the late Augustus de Morgan, at that time Professor of Mathematics in that institution. In 1853 he took his M.A. degree in the mathematical section at the University of London, and immediately afterwards commenced to practice in London as an architect and surveyor. He was elected an Associate of the Royal Institute of British Architects in December 1854, a position which he held till his resignation in 1876. In 1857 he gained the silver medal of the Institute for an essay on "The Mathematical Sciences in Relation to Architecture," his other contributions to the Transactions of the Institute including a paper on "The Admeasurement of the Sky in Cases of Light," in 1870, and in 1892 a mathematical note to the elaborate paper of Professor Aitchison, R.A., on "Byzantine Architecture," giving the proportions of the dome of St. Sophia at Constantinople. With this last subject he was particularly well qualified to deal, having made of it a special study for many years, commencing in 1866, when his paper on "The Stability of Domes" was read before the Royal Society. Mr. Tarn was best known to the profession by the numerous books which he wrote upon various subjects connected with architecture. Among these may be mentioned "The Science of Building" (1870), "Practical Geometry" (1871), "Tredgold's Carpentry" (1885), and "The Mechanics of Architecture" (1892), all of which ran through two or three editions. He also contributed some volumes to the well known "Weale Series." For some years Mr. Tarn practised in Huddersfield, during which period he designed several churches and schools in Yorkshire and Lancashire, the most important of these being St. Saviour's Church, Bacup, a fine building in the Gothic style of architecture. Other works of his include the Corn Exchange at Farnham (Surrey) and the offices of the Religious Tract Society in St. Paul's Churchyard. Mr. Tarn was twice married; first, in 1857, to a daughter of the late Mr. J. M. Bartlett, of Buckingham, and second, in 1885, to a daughter of the late Mr. Francis T. Dollman, F.R.I.B.A. He leaves four sons by his first wife and one by his second.

One day last week the traditional flag of masons in France was to be seen fluttering on the reconstructed Théâtre Français. It is only the exterior that can be considered as sufficiently complete to merit the adornment of the commemorative flag. The scaffolding is now being removed and people will soon be able to judge of the merit of the new building. Within, the greater part of the work remains to be executed. The stage and its appurtenances have been constructed and several of the offices required by the administration are in an advanced state. But the auditorium only presents the spectral columns, beams and scaffolding. The lift, which is an innovation, will soon be introduced. Efforts will be made to have the theatre ready for performances towards the end of December, for further disappointment would increase the enemies of the Waldeck-Rousseau Ministry.

The annual report of the Liverpool Architectural Society states that during the past session six ordinary meetings and four members' meetings were held. Eleven papers were read, of which seven were contributed by members. The meetings were well attended, the absence of formality appeared to be universally approved, and the discussions which followed the papers were well sustained. It is the intention to continue the members' evenings on the same lines next session, for the Council are convinced that the additional opportunities offered, especially to younger members of the Society, will undoubtedly prove of great value to those availing themselves of them, and will also tend in course of time to improve the discussions at the ordinary meetings. The library committee express the desire to develop a good reference library of large and costly works, and also a loan collection of books for students. After the chaos caused by so many removals, much remains to be done in seeing that the catalogue and books are all in order; but it is hoped to have this work completed before the opening of the next session, and suitable arrangements made for access to the books, several of which are at present missing. The balance in hand amounted to 163*l.* 10*s.* 7½*d.* The two addresses by the president, Mr. E. A. Ould, are much above the average of such compositions in interest.

Each international exhibition from 1851 has been made the subject of elaborate reports. Those relating to the Paris Exhibition of this year will no doubt be numberless. The French Minister of Commerce has ordered a general one, which is certain to command attention from the circumstances of its production and the authority of the authors. The general introduction will be contributed by the chief commissioner of the Exhibition, M. Alfred Picard. The part relating to letters and arts will be the work of M. Larroumet, secretary of the Académie des Beaux-Arts. Sciences will be treated by M. Picard; industries by M. Michel Lévy, inspector-general of mines; agriculture, horticulture and food by M. Grandeau; social economy by M. Gidè, and colonies by M. Paur Dislère. Each of the six authors will receive the modest honorarium of 2,000 francs.

Bacteriologists should find a productive field for investigation in the water-pipes of New York. The city has a population of about 3½ millions, and the people are to be excused when they exercise their inventive powers in creating drinks for which little water in a natural state is needed. The Commissioner who has charge of the supply in his last report has given the following description of a state of things in which he believed bane and antidote are found together:—"The pipes are coated with layers of slime. In this slime all the dirt passing through the pipes is caught and lodged. This deposit of slime has a frightful odour, as might be expected, and the pipes are filthy beyond description, but it is this very filth which purifies and cleanses the water. Now, to change this without changing the material of which the pipes are made would mean, at least, the scraping of this slime from the pipes. Then the filtered water would be turned in. With what result? Instead of bits of dirt there would be little flakes of tin, and instead of occasional biliousness we should all have tin poisoning. This is no exaggeration." There is a good deal of cynicism in the revelation, yet, after all, the Commissioner may be right. No doubt there is war between microbes in the pipes, as there is wherever they abound, and in New York, as in other places, the growths which are most dangerous to man may have to succumb to those of rival varieties. It will, however, be hard to convince ordinary people that the Commissioner's theory, "Similia similibus curantur," is acceptable, and that filthy pipes are an advantage to American water-drinkers.

The war in South Africa could not fail to have an effect that was disadvantageous on the University of Cape Town. But the Vice-Chancellor, Dr. Muir, was able to state at the last Degree Day that the check to progress was of less account than might have been anticipated. The authorities, who are in a position to judge, came to the conclusion that the effect would be only temporary, and when the disturbance had ceased all were confident of a forward movement of great magnitude and importance. Dr. Muir was able to communicate at least one item of gratifying information—the late Mr. Hiddingh had not only presented a suitable piece of land in Cape Town as a site for university buildings, but had also given a large sum of money for the erection of them. He had also founded a valuable scholarship. The Council of the University had resolved to lose no time in carrying out the wishes of the testator. The opportunity will consequently be presented to have buildings which should mark the beginning of a new era in the history of Cape Town. When the war is over the importance of the city will be increased, and it is desirable that the new buildings should be of a finer type than those which met the eyes of the members of the forces who have rescued South Africa from oppression.

BENJAMIN WEST, P.R.A.

The acquisition of Benjamin West's *The Raising of Lazarus*, which was until lately in Winchester Cathedral, by the town of Hartford, Connecticut, is an event which, it is to be hoped, will help to draw England and the United States closer together. Of late years the painter has not been much valued, but during his lifetime he stood very high with English amateurs, and his election as President of the Royal Academy in succession to Sir Joshua Reynolds is evidence that English artists treated him as one of themselves. If the money test is also applied, it supports the conclusion that West was remarkably well treated in this country. From George III. he received over 34,000*l.* for pictures; his *Christ Healing the Sick* was purchased by the British Institution for 3,000*l.*, and for his other works the payments obtained were above the standard of the time. On the other hand, it must be allowed that he rendered many services to English art. By painting *The Death of General Wolfe* with the characteristics of reality, instead of making it a classic masquerade, he helped to overthrow conventionalisms, and his kindness to all who sought his assistance or advice was unprecedented. Although he had been working for the king and the court for thirty-three years he never degenerated into sycophancy. With the exception of being occasionally more vain than became so dignified an artist, his character was as faultless as was to be expected in a man of the eighteenth century.

When he was born in 1738 Pennsylvania was a part of the British colony. His ancestors lived in Buckinghamshire, and one of them was the friend of John Hampden. Owing to his premature birth the simple people of Springfield, where the family lived, believed he was destined to be a great man, but how that was to be realised in such a place and at such a time could not have been very clear. An instinct for representation was innate in him, for it is recorded that he tried to represent a sleeping infant when he was no more than seven. In the following year the farm was visited by some Indians, who admired his drawings and showed him how they prepared the red and yellow colours employed in staining their weapons, and in that way the second President of the Royal Academy began his course of education as a painter. Other friends helped him; from one he received a box of paints and pencils, with a few engravings. With their aid he composed a picture which he preserved, and nearly thirty years afterwards he told John Galt "there were inventive touches of art in his first and juvenile essay which, with all his subsequent knowledge and experience, he had not been able to surpass." In his ninth year he went to Philadelphia, where for the first time he saw paintings—they were by an artist named Williams—which so deeply affected him, he burst into tears. Williams presented him with the treatises by Du Fresnoy and Richardson, which were then accepted as guides to art. Before he left Philadelphia he resolved to become a painter. Although he had only met with one artist, he had inferred from the couple of books he had read that the calling was the grandest which could be followed. A story is narrated which will help to suggest the difference between the primitive ways of Springfield and the anticipations of his future career with which West was filled. A school-fellow offered him a ride on his horse, and informed West that he was about to be apprenticed to a tailor. West in return told his friend that he was to be a painter, and might be the companion of kings and emperors. He then jumped down, saying, "You may ride alone; I am not going to ride with one who is willing to be a tailor."

West's first patrons were unable to pay such sums as kings and emperors should offer. A carpenter presented him with three boards. The young artist drew groups on them with the aid of ink, chalk and charcoal, and received a dollar for each of these works of art. He painted a portrait of a lady, which was successful, and then all the people about wished to have similar representations. His first history-piece was *The Death of Socrates*, the result of a suggestion by a local gunsmith. But all this early devotion to art was at the sacrifice of ordinary education. His acquaintance with ancient history was derived from the conversation of an English governess, and to the end of his days spelling was an insurmountable difficulty to him.

West's parents were occupied with the thought whether it was wise to allow their son to devote himself to so frivolous an occupation as painting. The question was submitted to a meeting of Friends. One of them was inspired to say:—"It is true that our tenets refuse to own the utility of art to mankind, but it seemeth to me that we have considered the matter too nicely. God has bestowed on this youth a genius for art—shall we question His wisdom? Can we believe that He gives such rare gifts but for a wise and a good purpose? I see the Divine hand in this; we shall do well to sanction the art and encourage this youth." The words indicated the end of an old era, for when the followers of George Fox realised that art was as divine in its origin as any other calling, there was a return of the human mind to healthier purposes than a narrow Puritanism. To West the occasion was most solemn. He considered himself to be dedicated to art, and had entered, as it were, into a covenant to employ his powers on subjects that were holy and pure. To the end of his life he retained the physical and mental characteristics of the old and estimable race of Quakers.

After a short experience as a volunteer, the remembrance of which enabled him afterwards to give an air of reality to his *Death of Wolfe*, he set up as a portrait-painter in Philadelphia. He was then in his eighteenth year. His prices were modest—two guineas and a half for a head and five guineas for a half-length. In the Governor's gallery was a painting of a saint in ecstasy by some Spanish artist. West copied it, and one of his patrons was so pleased with the work, he had himself represented in the same position, a circumstance which will illustrate the sense of propriety at the time. He afterwards painted a *Trial of Susanna*, a work of which West always thought with satisfaction. Next he went to New York, where he was able to obtain double prices. An Irish merchant named Kelly, when he heard the young artist was eager to go to Rome, presented him with an order for fifty guineas, and this money, with his own savings, enabled him to make the journey as an independent traveller. It was in July, 1760, in his twenty-second year, he was allowed to enter the Eternal City.

People in those days did not give much attention to American geography or ethnology. Some of the virtuosi, when they went to meet West, expected to see a Red Indian, others a Negro. When he was allowed to visit the Vatican galleries thirty carriage loads of distinguished people came to watch the effect of the works of art on the savage mind. Special precautions were taken to have him confounded by the sight of the *Apollo Belvidere*. When it was suddenly revealed to him he exclaimed, "My God—a young Mohawk warrior!" words which would be enough to throw Winckelmann into hysterics if he had heard them. It was only when West was allowed to explain how he had seen young Indian warriors in the same attitude and looking as intently after their arrows that his irreverence was condoned.

West's drawings were considered by the English artist Hamilton and the German Mengs to be without merit. A painting by him of Lord Grantham was for a time supposed to be from the hand of Mengs, and was received with admiration. Mengs himself was not displeased. He told West there was no need for him to come to Rome in order to learn to paint. He advised him to do no more than make drawings of the six best statues, and then to go and study in the galleries of Florence, Bologna and Venice. On his return to Rome he could paint an historical picture, and its reception would be enough to indicate the line of art he ought to follow. Illness kept West in Leghorn for almost a year. When, on his recovery, he went to the bank to draw the few pounds which remained to him, he was informed that instructions had been sent from Philadelphia by two merchants to allow him unlimited credit. Then he was able to follow Mengs's counsels. Like Reynolds, he tried to discover the mystery of Titian's success, and he was sanguine enough to believe he had succeeded; but there is no work of the American painter which suggests that he altogether understood what he sought after. His colours were never Venetian. On going back to Rome West endeavoured to prove his capacity by painting a *Cimon and Iphigenia*, and also an *Angelica and Medora*, which gained for him admission to the academies of Florence, Bologna and Parma. It was creditable to his frankness that he did not affect admiration for Michel Angelo. According to him, "Michel Angelo has not succeeded in giving a probable character to any of his works, the *Moses* perhaps excepted, but the works of Raphael grow daily more interesting, natural and noble."

He left Rome with the intention of going back to America. In June 1763 he arrived in London, and it was not long before he perceived there was a vacancy for him. Accordingly, he hired chambers for a studio in Bedford Street, Covent Garden. Commissions came to him without delay. The man who had only recollections of a governess's conversation to guide him was supposed to be qualified to paint scenes from ancient history. The bishops in those days were not afraid of such pictures as he could paint. The Archbishop of York ordered a painting of *Agrippina Landing the Ashes of Germanicus*, the Bishop of Worcester *The Return of the Prodigal Son*. Another patron's selection was *The Parting of Hector and Andromache*. The Archbishop also endeavoured to raise sufficient funds in order to provide an annuity for West, so that he could devote himself to historical painting. Lord Rockingham offered him a permanent salary of 700*l.* a year to paint the walls of his mansion in Yorkshire with that class of subject. George III.'s commission was for *The Departure of Regulus from Rome*. Considering the neglect of historical painting at the present time, the eagerness which was displayed 130 years ago to obtain examples now seems to be incredible. His good fortune was assured when he undertook to paint *The Death of General Wolfe*. His friend the Archbishop brought Reynolds to the artist's studio, in order to persuade West to abandon the innovation of painting the British and French soldiers in the uniforms then worn. In his account of the interview West relates how "Reynolds began a very ingenious and elegant dissertation on the state of the public taste in this country, and the danger which every innovation incurred of contempt and ridicule, and concluded by urging me earnestly to adopt the costume of antiquity as more becoming the greatness of my subject than the modern garb of European warriors. I answered that the event to be commemorated happened in the year 1758, in a region of the world unknown to Greeks and Romans, and at a period of time when no warriors who wore such costume existed. The subject I have to represent is a great battle fought and won, and the same truth which gives law to the historian should rule the painter. If, instead of the facts of the action, I introduce fictions, how shall I be understood by posterity? The Classic dress is certainly picturesque, but by using it I shall lose in sentiment what I gain in external grace. I want to mark the place, the time and the people, and to do this I must abide by truth." When the picture was painted Reynolds came and sat before it in silence for half an hour, then he said to Archbishop Drummond, "West has conquered; he has treated his subject as it ought to be treated; I retract my objections. I foresee that this picture will not only become one of the most popular, but will occasion a revolution in art."

The Society of Incorporated Artists was then at the height of its prosperity. A substantial surplus had been acquired, and the members could not agree about utilising it. The architects wished to have the money laid out on a building, the sculptors were desirous of statues, and the painters a gallery which would contain colossal pictures. West, as became a peaceful Quaker, was opposed to the professional contests, so he withdrew, and Reynolds went with him. When the king heard of the disputes he told Reynolds he was prepared to patronise any body that was founded on principles that would advance the interests of art. Such was the initiation of the Royal Academy. According to Haydon it originated in the basest intrigue, and "all the exclusive laws were thus carried which the artists complain of, and have been the cause of the whole of the bad passions, intrigue, injustice, cabal, heat and turmoil in English art ever since." *Regulus* was one of the pictures displayed in the first exhibition of the Academy. It was followed by a great many others, and it might be thought that the king had intended to save his children and courtiers the trouble of reading books on ancient history, for the past was to be revived on the walls of Windsor. West, not satisfied with secular history, proposed to paint a series of pictures in the royal chapel, illustrative of the progress of revealed religion. But the Defender of the Faith was afraid the innovation might not be considered orthodox, and the project was submitted to the bishops. It was approved, and twenty-eight out of the thirty-five subjects proposed were executed, and brought West the respectable sum of 21,705*l.*

West continued painting his big pictures for several years. When Reynolds died in 1792 he was unanimously selected as his successor. He was offered a knighthood, but he boldly declined the distinction, saying, "I really think I have earned greater eminence by my pencil already than knighthood could confer on me." A higher rank would under other conditions be more acceptable, for he added:—"Were I possessed of fortune, independent of my profession, sufficient to enable my posterity to maintain the rank, I think that, with my hereditary descent and the station I occupy among artists, a more permanent title might become a desirable object."

His enjoyment of Court favour could not fail to excite jealousy, and during the illness of the king in 1801 James Wyatt, who had charge of the alterations at Windsor, informed West that the production of pictures for the chapel must be suspended until further orders. Several months elapsed before he obtained an audience with the king, who declared that he was ignorant of the command to desist from further paintings. The king promised to take care of him, and for a time he drew his salary regularly, but it was not long before a second and more decisive order was made. West's enemies were not satisfied with that victory. Opposition to him arose in the Academy, and he retired. James Wyatt was his successor, but after a year West was again elected to the chair. There was only one dissentient vote, and that was for Mrs. Lloyd, R.A. Fuseli was supposed to be the practical joker, and when taxed with the misdeed his reply was, "And suppose I did. She is eligible; and isn't one old woman as good as another?"—words which will be repeated as long as the Academy lasts. West considered he was made to suffer because of his admiration of Bonaparte. When he went to Paris to look at the artistic spoils of Europe his simple vanity induced him to believe he was the observed of all observers. "Wherever I went," he said, "men looked at me, and ministers and people of influence in the State were constantly in my company. I was one day in the Louvre—all eyes were upon me; and I could not help observing to Charles Fox, who happened to be walking with me, how strong was the love of art and admiration of its professors in France." Fox had promised the painter to endeavour to encourage English art when he attained the political power to which he aspired, but he did not live long enough to carry out his intentions, and the war with France was too costly to allow of the expenditure of money for other objects. West lived until March 1820, and he was buried in St. Paul's near Reynolds, Opie and Barry.

West lived at a time when it was not considered necessary to study archæology before attempting the representation of a scene which occurred many ages before. The consequence is that one class of his pictures do not suggest anything that was characteristic of the times or places that are represented. But it must be said that in his indifference he was imitating the example of many of the great Italians. The peculiarity is the more remarkable when we remember that his pictures of modern incidents, such as *The Death of Wolfe*, *The Battle of La Hogue*, and *Penn's Treaty with the Indians*, are evidence of a desire to attain accuracy in costume and other accessories. His paintings can never be popular, for as time went on he employed larger and larger canvases, and only in palaces and public buildings could spaces be found for them. They often display excellent invention and skilful composition, but his colouring is commonplace. His drawings and sketches are more suggestive of his powers than his big pictures. He attained a position in art so easily, he may have imagined that works from his hand, however quickly executed, must have possessed qualities which would insure popularity. He had to suffer from a reaction which is not yet at an end. The people of the United States should, however, be proud of a man who could almost be claimed as their first representative in art, for it was only accident which kept him from having a home in his native country when the Revolution was successfully attempted.

ITALIAN ORNAMENT.*

IN the worlds of politics, literature and science, Italian influence is not of much account at the present time. There were no greater politicians, poets and men of science than once belonged to some of its numerous principalities. But as science is progressive, Italy's early representatives can only be valued for services which are now of little account, and as for literature, the examples on which the reputation of the country rests can have little reference to the multifarious life of to-day. The marked difference which is to be observed in the manner of studying and applying SHAKESPEARE and DANTE shows how vast is the separation between the modes of thought of the two poets; while the Englishman is wise for all time the Italian's power ends with the factions he upheld and encountered. In art, and especially architectural art, the effective power of the Italians is more widely exercised than in the fifteenth century. An Italian Renaissance building is, so to speak, of universal application. There is nothing incongruous in seeing a bank in that style in a Chinese city where foreigners congregate, or Italian Government offices in Pretoria, Italian municipal buildings in Australian towns, or an Italian capitol in the newest settlement in the "Wild West." The style is equally applicable for a criminal court-house, or for mercantile offices, electric stations, technical colleges, or to suit the newest business which requires a building for its transactions. A critic may admire Greek or Gothic as a style at a higher rate than Italian, but he has to admit there is a difference between them in facility of application, and if the world's votes on the subject could be taken Italian would have the majority in its favour.

A book which adds to our information about the buildings of Italy is manifestly of general interest. The riches which belong to such a subject are inexhaustible, and examples are to be found to gratify many varieties of dispositions among the searchers. Messrs. MIDDLETON and CARDEN in their new book frankly acknowledge that no great labour was required in hunting after suitable examples of ornament. They say in their preface:—"We had mainly in mind a desire for as much variety of treatment as could be found within the prescribed limits of the Italian Renaissance. The result has in this respect exceeded our expectations, and it was achieved without great effort (such is the marvellous wealth of motif in the ornamental work of Italy), and without, it is believed, repeating subjects which have been illustrated elsewhere in English works." Some difficulty would have been created if the attempt were made to divide the ornament into classes which would reveal local characteristics. But Mr. MIDDLETON, in the excellent "Note" which should have been incorporated in the volume, says that is hardly possible, for "in Florence, in Rome and in Venice, to say nothing of the smaller towns, there is the same low-relief carving inspired by designers in embossed, engraved and jewelled metal-work, the local differences being of a comparatively minor character, and generally due either to some peculiarity of the available material in which the work had to be executed, or to the idiosyncrasy of some particular designer." But as every drawing clearly states what building it was derived from, those who consult the volume can, if they have time, skill and courage, endeavour to make out the affinity between the examples of one district. By the majority of students the arrangements of the authors will be accepted, and the examples supplied will be utilised for their suitability rather than for their origin. It was intended at one time to employ photographs and line drawing in equal proportions for the illustrations, but the photographs were not considered to give as useful representations as scale drawings, and nearly all the plates are accordingly reproductions from pen-and-ink sketches. It is mentioned that the original sketches "were made with extreme rapidity in pencil, many of them being drawn to scale on the spot on a half-imperial drawing block, while in other cases odd scraps of paper had to be used and the rough notes afterwards pieced together." From what is stated it will be evident to the initiated that the book is intended for those who use ornament and are desirous of having suitable examples. They will have no objection to sketches that were made with extreme rapidity, though amateurs might desire to have a more mechanical perfection in the forms. The plates, if submitted to the examiners of the Board of Education, would not secure a prize for beauty of draughtsmanship, although they would be taken as evidence of a comprehension of the Italian style. The curved lines, the shading and the figures are not always satisfactory, but every experienced ornamentist can from the drawings easily realise the qualities of the subjects, and will be able to express them with more or less decision to suit his own purpose. In looking at the plates one thinks more of the original authors than of the translators, and when using books for the application of ornament that is not a disadvantage.

There are fifty plates derived from Milan, Rome, Florence, Bologna, Ferrara, Venice, Padua, Vicenza, Verona, Brescia, Pavia, Piacenza and Modena. The subjects represent architraves, panels, scrolls, doorways, monuments, grilles, balconies, friezes, knockers, cornices, hand-rails, caps, corbels, &c. They comprise nearly all the elements of Renaissance ornament, but treated with more freedom than is to be found in the Classic examples. The circular panels round the base of apses in Santa Maria delle Grazie, Milan, which are ascribed to BRAMANTE, show four examples of running ornament, three of which are closely related. Symmetry and repetition are inevitable with Italian ornament, but it is evident the designers were often anxious to conceal those properties. In other cases we find unity of effect produced by diversity of elements. Thus, in the part of the monument from San Gregorio, Rome, the cornucopia and the dolphin have lines so much alike that the difference between the two may not at first be perceived. The fleur-de-lis, made of wrought-iron bars, introduced in a gate from St. John Lateran, will recall some western examples, but there is a peculiar richness about the details which belongs to Italian work alone. The grille from the Ricardi Palace is also remarkable for the breadth of treatment which is seen in the arrangement of the curves. The Marsupini Monument in Santa Croce, Florence, shows how immortality can be gained by the employment of an artist to make a portrait or to construct a tomb. As a writer the Professor was not worth remembrance, but DESIDERIO DA SETTIGNANO'S sarcophagus would be worthy to contain the ashes of any of the great Roman writers. The Greek spirit is seen in the prickly acanthus-leaves, and the massive lion's feet suggest eternal duration. No doubt the sculptor is not all through consistent in his plant forms, but we must not expect logical completeness in Italian ornament. Artists realised that decoration in all forms was only a kind of play, and so long as the desired effect was produced much latitude had to be allowed in introducing and combining the elements. The most remarkable case of incongruity is the Loggia of the Vatican, where RAPHAEL and his assistants were allowed to fill the pilasters with subjects without the slightest relationship, and which are as amazing from the unexpectedness as from the beauty. Northern logic in art was incomprehensible to the artists of Italy and to their employers. The sculptor of one of the friezes from Florence could not have witnessed two dolphins holding by their mouths a vase containing a plant in flower, but the boldness of the fancy was appreciated by owner and citizens.

Messrs. MIDDLETON and CARDEN have, however, prepared their drawings for students and others who have been brought up under a more rigid system of æsthetics, and care has been taken to use examples which cannot be considered as too irregular or fantastical for the English market. The majority of the pieces show a respect for symmetry and regularity, and if sometimes the ornament becomes almost mechanical it is on that account better adapted to the modes of reproduction which are employed in this country. The judgment exercised in the selection should not be overlooked, for much of the ornament could be at once utilised by the possessors of machines for carving and painting. On the whole "Ornamental Details" can be considered as essentially a practical book, in which the manufacturer will find ready-made forms of unquestionable grace.

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* *Ornamental Details of the Italian Renaissance.* Measured and drawn by G. A. T. Middleton and R. W. Carden. (London: B. T. Batsford.)

PRINCIPLES OF CONSTRUCTION FOR ARCHITECTURAL STUDENTS.

By the late E. Wyndham Tarn, M.A.

(*Continued from last week.*)

X. *Roofs.*

ROOF is the name given to the timber framework which supports the covering of a building; this framework may either be trussed or untrussed, a trussed roof having its timbers so arranged as to throw no outward thrust upon the supports, while an untrussed roof produces a horizontal thrust upon the supports. At present we shall confine our attention to the latter kind of roof.

The simplest form of untrussed roof is the lean-to or shed roof, in which the rafters are sloped upwards from the top of one wall to the top of another and higher wall. The upper ends of the rafters are notched upon a wall plate resting on the top of the higher wall, and in this case there will be no horizontal thrust on the lower wall, and the load of the roof will be carried equally by the two walls. Taking the load at ½ cwt. per square foot uniformly distributed, this will be the load per foot length on each rafter if placed 12 inches apart, or ½ cwt. multiplied by the length in feet is the total load which each rafter has to sustain. Let us suppose the rafter to be placed at an angle of 27 degs. with the horizontal, in which case the height is half the span, then the transverse stress at right angles to the rafter is 9-10ths of the load, or ·45 cwt. per foot of length, and the deflexion will be that due to 5-8ths of ·45 cwt, or ·28 cwt. per foot length, as shown previously (IX.). In order to prevent the rafters from having a deflexion of more than 1-40th of an inch to every foot of length (according to Tredgold's rule) their scantling, when fir is used, should be as follows:—For a length of 10 feet the scantling should be 6 inches by 2 inches, or 5 inches by 3 inches; for a length of 12 feet it should be 7 inches by 2 inches, or 6 inches by 3 inches, and for a length of 15 feet it should be either 9 inches by 2 inches, or 7½ inches by 3 inches, the angle of pitch being 27 degs.

Span-roof consists of pairs of rafters meeting in a ridge piece and resting at their feet upon two walls of equal height. The heads of the rafters press against each other with a force varying with the load and with the pitch of the rafters. This pressure or reaction produces a corresponding horizontal thrust upon the top of the walls, which must be made of sufficient strength to resist this thrust. When the vertical height of the ridge above the feet of the rafters is one-fourth of the span, or the angle of pitch is 27 degs., the horizontal thrust is equal to the load on the rafter.

Suppose, for example, that the span is 18 feet, length of rafter 10 feet, the load on each square foot of roofing ½ cwt., then the load per foot taken longitudinally will be 5 cwts., which will be the outward thrust on the top of the wall for each foot of length. If the wall is 20 feet high, and has no tie or buttress, its thickness (allowing 1 cwt. per cubic foot for its weight) must be 4 feet in order to have stability. If the pitch is 45 degs. the thrust will be only half the load, but the length of the rafter will be 13 feet, and the load will be 6½ cwts., so that the thrust in this case is 3¼ cwts., instead of 5 cwts., as when the pitch is 27 degs.; then in this case a wall 20 feet high should have a thickness of 3½ feet for stability.

Collar-roof has the rafters tied together at some point between the foot and the ridge by a horizontal piece called a collar, which materially reduces the thrust upon the walls. Thus, if the collar is placed one-third of the way down from the ridge, the thrust is reduced by one-third, and if half-way down it is reduced one-half, and so on. When the collar is placed at the feet of the rafters it is called a tie-beam, and entirely counteracts the horizontal outward thrust; the tension in the tie-beam will then be equal to the outward thrust as given above.

For a roof of 18 feet span, and a pitch of 27 deg., with a collar half-way down, the thickness of the wall 20 feet high should be 3 feet. If the pitch is 45 feet, then the thickness of the wall may be 2½ feet.

We will now suppose the rafters to be supported on principals 10 feet apart by means of purlins, each pair of principals having a collar half-way down. Then the load on each principal rafter will be ten times the above, or 65 cwts., for a roof of 18-feet span and a pitch of 45 deg, and the horizontal thrust will be half this, or 32·5 cwts., when there is no collar. Let the wall be 20 feet high and 18 inches thick, but strengthened by triangular buttresses 18 inches wide the whole height of the wall. Then we have the resistance of 10 feet of walling as well as that of the buttress and the weight of the roof to place against the thrust of the roof, which is reduced to 16·25 cwts. when the collar is placed half-way down. By comparing the "moments" of these forces taken about the outer edge of the buttress at its base, we find that the triangular buttress must have a projection of 14 inches from the wall at its base in order to obtain sufficient stability.

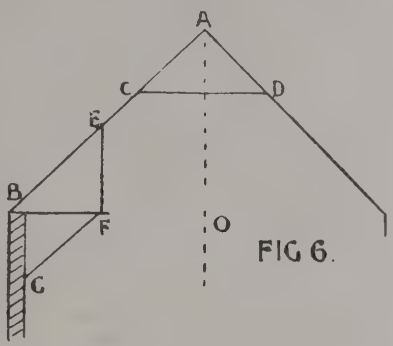


FIG 6.

Hammer-beam roof is a collar roof in which the feet of the principal rafters, A B (fig. 6), are let into a horizontal hammer-beam, B F, which projects inwards for some distance from the wall, and has its outer end supported by a slanting strut, F G, from a corbel below, and also itself supports a vertical strut, E F, which serves to stiffen the rafter. By this arrangement the thrust of the roof is brought lower down the wall, and acts at the foot of the slanting strut, F G, instead of at the top, B, of the wall, so that the leverage about the base is reduced in that proportion.

Suppose that in the last example of a collar-beam roof the collar is placed at one-third of the way down, so that the horizontal thrust at the foot is two-thirds of 32½ cwts., or 21⅔ cwts.; let the hammer-beam project 5 feet, and form with the struts two right-angled triangles, so that the foot of the slanting strut is 5 feet below the top of the wall; then if the wall is 20 feet high the leverage of this thrust about the base is reduced by one-fourth, and will be the same as that of a plain collar-beam roof with the collar half-way down; so that the projection of the buttress should be 14 inches as before.

For a hammer-beam roof of 45 deg. pitch, with rafters 18 feet long and the span 25½ feet, the load on each principal rafter will be 90 cwts., and the horizontal thrust, with a collar one-third of the way down, is 30 cwts.; then if the foot of the strut, G F, is 5 feet below the top of the wall (supposed 18 inches thick and 20 feet high), the triangular buttress 18 inches wide should have a projection at the base of 18 inches, where the principals are 10 feet apart.

In the roof of Westminster Hall the pitch is 52 deg., the span is 68 feet, and the length of rafter 55 feet. The height from the top of the wall to the ridge is 43 feet, so that the horizontal thrust at the foot is to the load in the proportion of 17 to 43, if there had been no collar. The distance between the principals is 18 feet, and the load on each principal rafter is 495 cwts, therefore if there had been no collar the horizontal thrust would have been 196 cwts; but since the collar is placed half-way down this thrust is reduced to one-half, or 98 cwts. The walls are 40 feet high and the thrust is carried by the hammer-beam arrangement down to a point 20 feet above the base, so that the horizontal thrust must be taken as acting at this point instead of at the top of the wall. Under these conditions we find that if the thickness of the wall is uniform throughout it must be not less than 3 feet in order to secure stability in the structure; whereas if the thrust had been at the top of the wall it would have required a thickness of 4½ feet. If the thickness of the wall at the top had been 2 feet and it was built with a batter outwards, we find that a thickness of 3 feet at the base would suffice for stability, in which case one-sixth of the material would have been saved.

If the ends of the hammer-beams in a roof of this description are connected by an iron tie-rod of sufficient strength to resist the horizontal thrust, there would be no thrust at all on the walls, which in that case need only be of sufficient strength to support the load of the roof. In the example of Westminster Hall roof such a tie-rod of iron if 1 square inch of section would prevent any thrust on the walls.

(*To be continued.*)

FAVERSHAM, KENT.*

FAVERSHAM, in Kent, is situated close to the great Roman highway from Richborough to London, called Watling Street, which is believed to be a Saxon corruption of Vitellina Strata, or the street of Vitellius, the ninth Roman emperor, in whose reign this street or thoroughfare was completed. This town is supposed to be the Roman station Durolevum mentioned in the "Itinerary" of Antoninus Pius, and Hasted supposes this to have been on Judde Hill in this parish, and adds the Romans had undoubtedly some strong military post on this hill, on the summit of which are the remains of a very deep and broad ditch. At the bottom of the hill in the next field are the ruins of Stone Chapel, in which numbers of Roman bricks are interspersed among the flints. There is also at the back of Judde House, just within the wood, the vestigia of a strong Roman work. When the road from the summit of the hill was cut down, quantities of fragments of Roman culinary ware and a coin of Vespasian were found, and in the garden of Judde House coins of Hadrian, Marcus Aurelius, Arcadius and others have been discovered; and at about a mile distant from this hill, north-eastward on a hill in the parish of Davington, almost adjoining the town of Faversham, a Roman burial-place has been discovered, and many Roman coins, urns and other relics of antiquity dug up there, as there have been at different times at Faversham and other places near it, especially along the London high road (Watling Street).

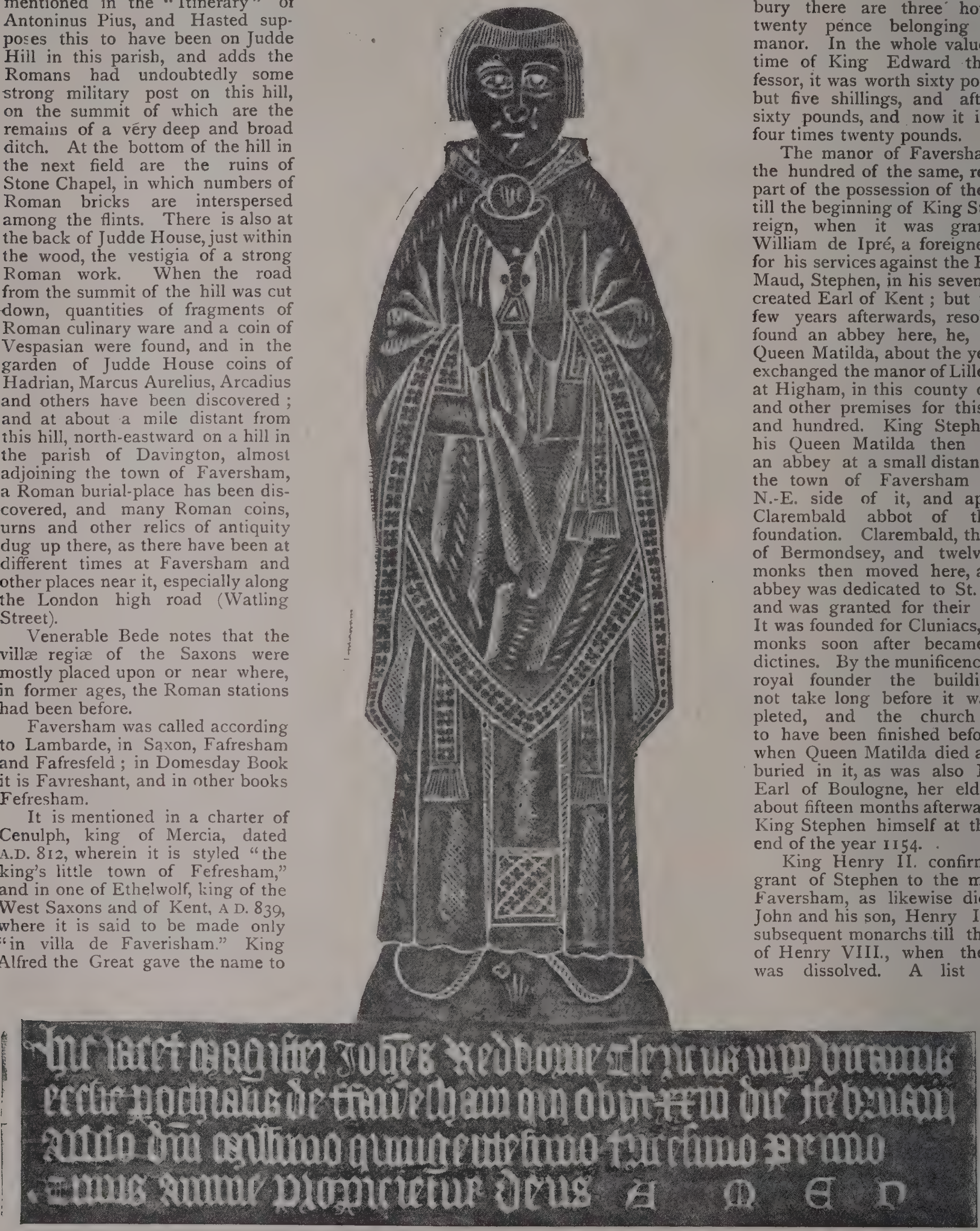
Venerable Bede notes that the villæ regiæ of the Saxons were mostly placed upon or near where, in former ages, the Roman stations had been before.

Faversham was called according to Lambarde, in Saxon, Fafresham and Fafresfeld; in Domesday Book it is Favreshant, and in other books Fefresham.

It is mentioned in a charter of Cenulph, king of Mercia, dated A.D. 812, wherein it is styled "the king's little town of Fefresham," and in one of Ethelwolf, king of the West Saxons and of Kent, A.D. 839, where it is said to be made only "in villa de Faverisham." King Alfred the Great gave the name to the hundred in which it is situated. Under the name of Faversfield it was a seat of the Saxon kings, where Ethelstan, in 930, held a witenagemot. It continued part of the ancient demesne of the Crown of the realm at the time of taking the Domesday survey in the year 1080. It is therein described as "Terra Regis"—King William holds Favreshant. It was taxed at seven sulings. The arable land is 17 carucates. In demesne there are two. There are 30 villeins with 40 borderers, having 24 carucates. There are five servants, and one mill of twenty shillings and 2 acres of meadow. Wood for the pannage of 100 hogs, and of the pasture of the wood thirty-one shillings and twopence. A market of four pounds, and two salt pits of three shillings and twopence, and in the city of Canterbury there are three houses of twenty pence belonging to this manor. In the whole value, in the time of King Edward the Confessor, it was worth sixty pounds all but five shillings, and afterwards sixty pounds, and now it is worth four times twenty pounds.

The manor of Faversham, with the hundred of the same, remained part of the possession of the Crown till the beginning of King Stephen's reign, when it was granted to William de Ipré, a foreigner, who, for his services against the Empress Maud, Stephen, in his seventh year, created Earl of Kent; but within a few years afterwards, resolving to found an abbey here, he, with his Queen Matilda, about the year 1147 exchanged the manor of Lillechurch at Higham, in this county of Kent, and other premises for this manor and hundred. King Stephen and his Queen Matilda then founded an abbey at a small distance from the town of Faversham on the N.-E. side of it, and appointed Clarembald abbot of this new foundation. Clarembald, then prior of Bermondsey, and twelve other monks then moved here, and this abbey was dedicated to St. Saviour and was granted for their support. It was founded for Cluniacs, but the monks soon after became Benedictines. By the munificence of the royal founder the building did not take long before it was completed, and the church seems to have been finished before 1151, when Queen Matilda died and was buried in it, as was also Eustace, Earl of Boulogne, her eldest son, about fifteen months afterwards, and King Stephen himself at the latter end of the year 1154.

King Henry II. confirmed the grant of Stephen to the monks of Faversham, as likewise did King John and his son, Henry III., and subsequent monarchs till the reign of Henry VIII., when the abbey was dissolved. A list of the abbots of Faversham will be found in Hasted's "History of Kent." Very few traces of the ruins of the abbey now remain. Henry VIII. at first granted the site of the late abbey and manor to John Wheler and afterwards to Sir Thomas Cheney. It then passed through the hands of various families till the reign of Charles I., when it came into the possession of Sir George Sondes, afterwards created Earl of Faversham. This


hic iacet magister Johes Redborne clericus nup vicarius
eccle pochialis de ffavesham qui obiit xxiii die februarij
anno dni millimo quingentesimo tricesimo primo
cuius anime propicietur deus A M E N

This illustration is from a brass rubbing in the chancel of Faversham Church, Kent, and shows a fine memorial to John Redborne, M.A., vicar of Faversham, who died in 1531. The "rubbing" was made by the late Mr. Robert Palgrave, architect, whose memoir was published in *The Architect* of July 1, 1882.

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* A paper read by Mr. W. F. Potter, architect, at the visit of the members of the Upper Norwood Athenæum.

town has been favoured by different kings with no less than seventeen different charters, besides those granted from time to time to the Cinque Ports.

Sir Thomas Cheney in the thirty-sixth year of Henry VIII. alienated the site and premises of the abbey to Mr. Thomas Arden, of Faversham, gentleman, who was, according to Hasted, basely murdered in his own house here by the contrivance of his wife and others on February 15, 1550, in the fourth year of the reign of Edward VI. Hasted adds, "The accounts of the horrid murder for which Alice Arden and her accomplices were executed at different places is fully related in Hollingshed's Chronicles." The house of "Arden of Feversham" is still to be seen near the north side of the church, and the subject forms the theme of a tragedy written in 1592, and edited and published by A. H. Bullen in 1888.

Thomas Arden, by his will dated 1549, left property for charitable purposes to the town of Faversham. He left an only daughter, Margaret, who afterwards married Thomas Bradburne. They were succeeded by their son, Nicholas Bradburne, who sold the property to John Finch, ancestor of the Earls of Winchelsea.

Several of our monarchs have visited Faversham, and among them our old friend Queen Elizabeth; the last being James II., who had granted a charter to the town in 1685, and made an unwilling visit here in 1688, when he was seized while attempting to flee to France, and brought back to London.

The two saints Crispin and Crispianus are said to have fled from Rome to England from persecution and lived at Faversham, where they founded an asylum near the town.

The church, which stands close to the east side of the town, is dedicated to St. Mary of Charity, or, as described by Hasted, to the Assumption of Our Lady of Faversham, and is of very ancient foundation. It is cruciform, and had until 1755, when it was taken down, a large square tower in the middle of it. In taking down this tower several Roman bricks were found in the masonry, giving rise to the supposition that a church must have stood here in Roman times. The oldest record we have of the church is that William I., in 1070, gave to the abbot of St. Augustine at Canterbury the church of Faversham.

No part of the present structure can be assigned to that date. The church is believed to have been erected temp. Edward II., by a silver penny of that reign being found under one of the piers which supported the central tower. In the windows of the church are arms of Edward, Prince of Wales, and John of Eltham, sons of Edward II, and the architecture of the building is of that date. There is a small Early English crypt built with groined arches, and an original Early English arch may be traced within the tower, but the rest of the church may be described as Early Decorated, of the beginning of the fourteenth century. The walls are built of flints with quoins of ashlar Caen stone. The total length of the church, including chancel, is 160 feet, width of nave 65 feet, and length of aisles from north to south 124 feet. The height of the present tower and spire is 148 feet.

There are some fragments of mural paintings on the walls of the church. The following are the scenes painted on the pillar of the north aisle near the chancel:—On the lower tier: the Annunciation, the Salutation and the Adoration; on the middle tier: the Nativity, the Announcement to the Shepherds and the Presentation; and on the upper tier there is the Crucifixion, and the Virgin, St. John and the Maries at the Tomb.

On the south wall of the north chancel aisle in the spandrel of the eastern arch there is King Edward and the Pilgrim, and in the north wall of St. Thomas à Becket's chapel his murder is depicted.

In 1440 there were placed in the former tower five new bells, and in 1459 a sixth was added. These all remained till 1749, when they were cast into a new peal of eight bells. In 1754, the tower and church roof being deemed dangerous, a faculty was obtained to pull it down, which was done under the plans and direction of Mr. George Dance, architect. The interior of the church was then restored and reroofed as we now see it in the Tuscan style, and a new tower and spire built at the west end after the style of St. Nicholas, Newcastle-on-Tyne, in 1797, from designs by Mr. Beazley.

The clerestory has been rebuilt in brickwork and the tracery of the windows has been restored.

Several ancient wooden stalls remain in chancel, and in the vestry is the fourteenth-century oak chest with its singular carving, thus referred to in Parker's "Glossary of Architecture":—"Of decorated chests there are many examples, as at St. Mary Magdalene, Oxford; Faversham and Wittersham, Kent; they are usually highly ornamented with panelling and carving, which, both in this and the preceding style, are commonly confined to the front." The east window is by Willement. This church is rich in monuments and brasses. The most interesting is that of King Stephen, whose tomb is situated at the east end of the south aisle. On the north side of chancel is a fine altar tomb. In the centre of the chancel is a fine brass of William Thornbury, vicar of Faversham, died 1480. A smaller one to John Redborne, M.A, vicar, died 1531. In south transept is a large brass to Henry Hatcher, of Faversham, and wife, with inscription, 1533. This church was restored by Sir George Gilbert Scott, R.A., in 1874.

The foundation stone of the Faversham Grammar School was laid by the Rev. Dr. Cole in the eighteenth year of King Henry VIII, A.D. 1527, and is an interesting building. Faversham chiefly consists of four streets, forming an irregular cross. The creek on which it is situated admits vessels of 200 tons. This town sends much agricultural produce to London. It was visited by the Kent Archæological Society, July 30, 1872. The chief industries of Faversham are oysters and gunpowder. Edward Jacob, in his "History of Faversham," says that oyster fisheries have been established here ever since the time of the Romans. Gunpowder mills were established ever since the reign of Queen Elizabeth. The present vicar of Faversham is the Rev. Canon Oakley Coles.

Davington.

Davington is a small village about one mile from Faversham, and has had many Roman relics found here, which makes it probable that this was once a Roman burial-ground, as already described. The manor and priory of Davington in the reign of King Stephen was in the possession of Fulk de Newnham, who in 1153 founded on the site of it a priory for nuns of the Benedictine Order, which was dedicated to St. Mary Magdalene. In 1326 Archbishop Reynolds prescribed certain rules for the better government of the nuns of this priory, which being in the French language for their better understanding has made it supposed by some that they were French women. This priory became so poor in the reign of Henry VIII. that it was quite deserted, so that it was dissolved and escheated to the Crown, whereupon Henry VIII. granted it to Sir Thomas Cheney. The priory joined the north side of the church, and was much shattered by a terrible explosion at the gunpowder mills in 1781.

The church is dedicated to St. Mary Magdalene. It was built adjoining to and, indeed, under one roof with the priory, and presumably of the same date, 1153. The west doorway is an elegant Norman stone circular arch, enriched with pillars on each side. The proprietor claims exemption for this church from the jurisdiction of the archdeacon or any other ordinary, and accordingly regularly opposes their visiting it. Excellent illustrations of Davington Church and Priory will be found in Edward Jacob's "History of Faversham." This church contains many interesting monumental relics of the gentry of the neighbourhood, and has been lately restored.

In conclusion, I would mention that the population of Faversham is 12,000 persons, or about equal to Pretoria, but they carry on their avocations under more peaceful and less exciteable conditions—oysters and gunpowder. May they continue to enjoy their oysters in peace, and, although engaged in the traffic of gunpowder, may they never encounter any more serious invasions than those they now experience from the members and friends of the Upper Norwood Athenæum.

HAWICK ARCHÆOLOGICAL SOCIETY.

At a meeting of the Hawick Archæological Society on the 28th ult., the Rev. W. A. P. Johnman, president, in the chair, Mr. D. M'B. Watson read an interesting paper on Hermitage Castle. He referred to the visit of the Society recently to Hermitage, when the zeal of some of the party led to an examination of the sculptured stones strewed on the site of the old church at Hermitage and in the surrounding churchyard. This had resulted in a systematic excavation of the ruins of the church being undertaken by the Duke of Buccleuch, the results of which they hoped to have laid before the Society at a future meeting. Mr. Heatlie followed with a paper on "Church Tokens." In a discussion which followed, the Rev. Professor Cooper, Glasgow (who had been elected a life member of the Society), in regard to tokens belonging to other parishes being found in some churches, mentioned that sometimes tokens were given instead of certificates. In Strichen, Aberdeenshire, a number of tokens of the parish of Old Deer were found, and the beadle having being asked for an explanation replied:—"Oh, sir, ye see, Mr. Basil Anderson, him that was minister at Old Deer, he could not write, and instead of giving a certificate in handwriting he always gave them a token." Votes of thanks were accorded to Mr. Watson and Mr. Heatlie for their papers.

An Excursion Meeting of the Northern Architectural Association will be held to-morrow (September 8), when St. Columba's Church, Sunderland, will be visited, and subsequently the painter of the fresco in it (Mr. J. Eadie Reid) will deliver a lecture on "Some Principles of Christian Art Historically Considered." The Right Rev. Bishop Sandford will preside.

NOTES AND COMMENTS.

AMONG the lost treasures of antiquity are the poems of ARCHILOCHUS. He was one of the early Greek poets, a native of Paros. He was dreaded as a satirist, and the Spartan youths were prohibited reading a line from his pen. His satire was so bitter, a man who had arranged to give the poet his daughter, but drew back from his agreement, preferred to hang himself rather than be pointed out as the subject of a poem by ARCHILOCHUS. It is supposed that finally the satirist was slain in combat by one of his victims. It is remarkable that within the last few weeks an inscription has been found in Paros relating to him. Unfortunately it is only a fragment. It is the work of DEMÆUS, an author whose name was hitherto unknown. The inscription is more elaborate than a modern epitaph. It is supposed to have been written about three centuries before our era. That such a notice was cut in stone goes to show that the place where the inscription was found must have been associated with the life of ARCHILOCHUS. The whole has not yet been deciphered, but as it is in the hands of Herr VON GARTRINGER, it may be expected that no time will be lost in publishing a translation of the fragment, which is of unique interest.

THE new and immense basilica of the Sacré Cœur on the summit of Montmartre, which appears to dominate the whole city when seen from a distance, has not been able to efface the historical associations of the old church of St. Peter. Like so many buildings of the same class, it is supposed to stand on a site which became interesting because it was the scene of some of the martyrdoms from which the district has received its name. A part of the church dates from the twelfth century, and it is considered there is work in it which is of a still older date, although at first not recognisable on account of alterations. The building when about to be demolished was adopted by the Municipal Council of Paris as a memorial which deserved to be conserved, because it is the oldest survival of the ancient churches of Paris. The restoration was placed in the hands of M. BOUVARD. That the work is sure to be costly is evident when it is found that a sum of 83,610 francs has been assigned to the restoration of the choir alone. M. BOUVARD, having a large experience, does not believe that such an undertaking could be adequately carried out by every building contractor. Accordingly, he has restricted the tendering to those alone who possess the experience and special capacity which will bring the work to a satisfactory termination. Operations are to be commenced without delay.

THE Manchester City Council intend to seek powers in the next session of Parliament for several public improvements. One is the acquisition and removal of St. Peter's Church. The approach from Victoria Street to Cathedral Yard is also on the list of alterations. It was proposed that Corporation Street should be increased in width from 48 feet to 75 feet for a great part of its length, but owing to the expense the project was postponed for further consideration. The Council also seek for power to borrow to a limited extent on bills or promissory notes in substitution to a like extent for the powers now possessed to borrow by mortgage or the issue of consolidated stock. Land is to be purchased at Carrington for the erection of an infectious diseases hospital, and property is also to be acquired for the extension of Smithfield Market.

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: LOWER PORTION OF WEST FRONT.

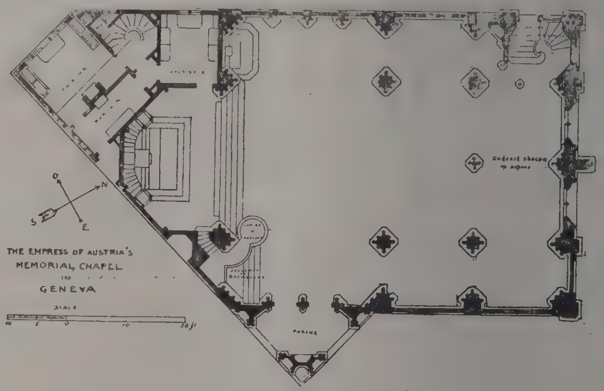
THE EMPRESS OF AUSTRIA'S MEMORIAL CHAPEL, GENEVA.

ON Saturday, September 10, 1898, at two o'clock, Her Majesty the late Empress of AUSTRIA was murdered in Geneva by an Italian Anarchist. The whole population of Geneva turned out in procession before the representatives of the Austrian Monarchy as a manifestation of their horror for the deed, and their deep sympathy for the bereaved family. A certain number of Genevese citizens have thought that the sentiments of the population of Geneva which were expressed publicly two years ago should be recorded in a lasting manner, and in the way the most agreeable to the stricken family and the people of Austria-Hungary. They have decided to erect a memorial chapel under the name of St. Elizabeth, and devote it to the use of the German-speaking Roman Catholics in Geneva. To prepare the design they have commissioned our fellow-countryman, Mr. LAWRENCE HARVEY, a distinguished pupil of the celebrated German architect, GOTTFRIED SEMPER, and of the Paris Ecole des Beaux-Arts, who will be well remembered in London for the classes of scientific masonry he conducted at the City and Guilds of London Central Institute, and for his lectures on "Style and Styles" delivered in the same establishment, the Royal Institute of British Architects, the South Kensington Museum and other places.

The design has been adapted to suit exactly the irregular site allowed for the purpose of the memorial by the city authorities. The building, although situated in a rather quiet place, will be the first object of interest seen by all visitors travelling by rail from Paris to Geneva.

The style selected for the building is Late English Gothic, with fan-vaulting used freely, without any attempt at making the work become a result of archæological research instead of architectural design. Some intricacy in arches and vaulting has been aimed at in order to give practical employment of a high order to the classes of scientific masonry Mr. HARVEY is directing in Geneva on behalf of the Government.

All architectural features, both outside and inside, will be of black marble, polished in parts, and picked out with gold glass mosaic. The cells of the vaulting will be filled with mosaic representing Alpine plants on a field of gold; the ribs will receive narrow fillets of gold mosaic, and if means be available the whole of the walls inside will be covered with glass mosaic on the cloisonné system of Mr. CLEMENT HEATON, formerly of London, now established in Neuchâtel.



All the decorative features outside, such as crockets, bosses, finials, &c., will be wrought in copper, with gold leaf burnt in, which secures to the gilding nearly everlasting duration.

In opposition to all this wealth of material and colour the spaces between the piers will be filled in with blocks of concrete of small dimensions, which by their size and roughness will give scale and value to the rest of the work.

The illustrations comprise a plan, an outside and an inside view. The latter, to be seen stereoscopically, should be looked at with one eye only, placed at the distance of the width of the picture. For the outside view the point of station is exactly in the centre at the level of the figures to the left of the entrance; for the inside view the point is opposite the pulpit on the left-hand side.

But the chapel is not one which should be judged solely from the data of drawings. The effect produced by the building itself will be far more artistic than is suggested by the views. Mr. HARVEY is essentially a master of masonry who has rediscovered the secrets by which Mediæval churches and cathedrals, in spite of the prejudices raised against them in consequence of a change of ritual, continue to extort admiration from the most obdurate of critics. When the church is completed it will not only add a new attraction to Geneva, but it will be a worthy memorial of an Empress whose fate evoked the sympathy of the world.

THE ROYAL HOTEL, HENLEY-ON-THAMES.

STAINED GLASS IN ENGLAND SINCE THE GOTHIC REVIVAL.

WITH SOME ACCOUNT OF THE CHURCHES REFERRED TO.

By T. Francis Bumpus,

Author of "Ecclesiologia Germanica," "Summer Holidays among French Cathedrals," &c.

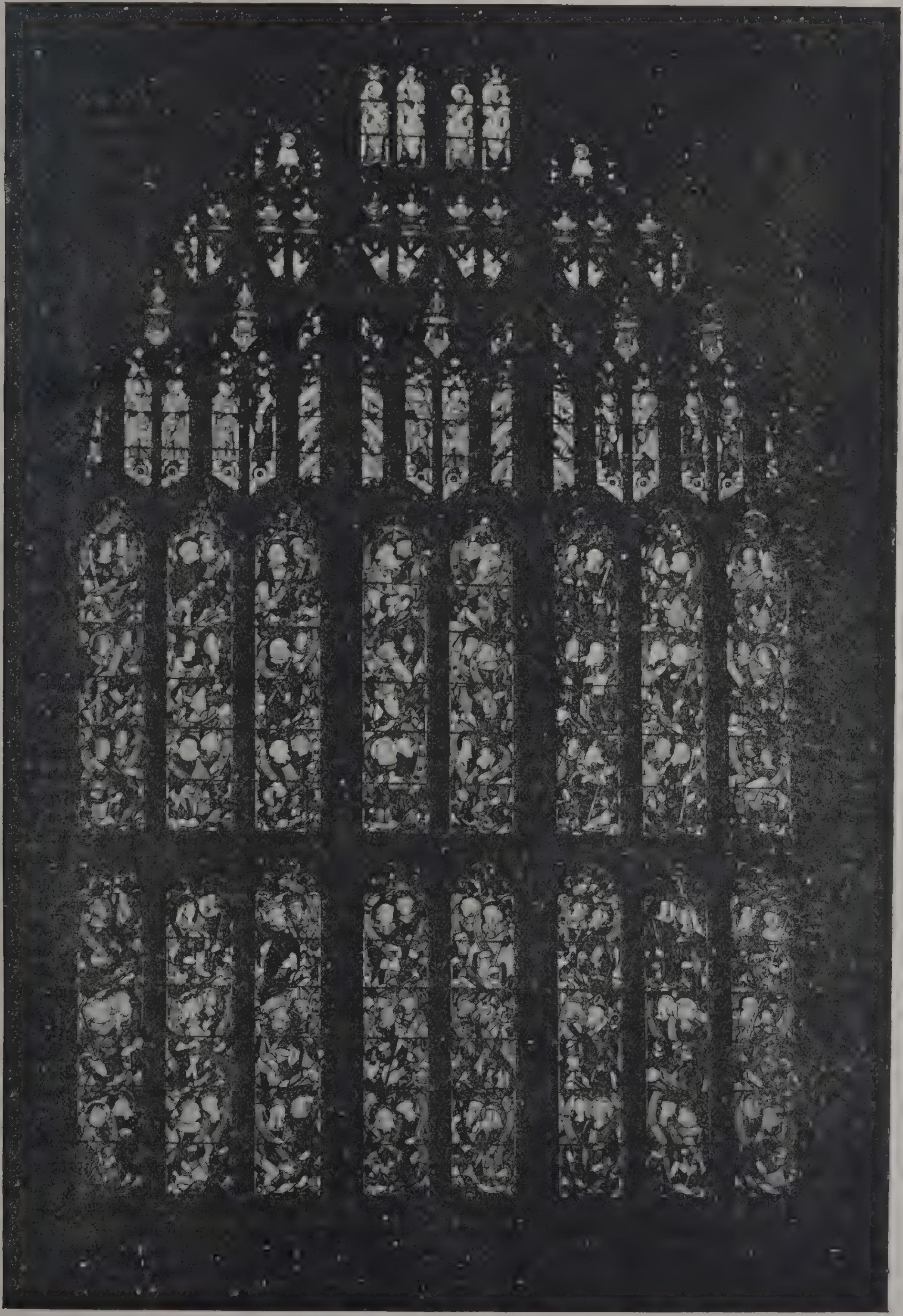
(*Continued from page* 91.)

The Works of Hardman.

A TOUR recently made among the cathedrals and churches of southern England, ranging from Brighton in the east to Exeter in the west, has not only left many pleasant memories of new ideas received, suggested new thoughts, and revived recollections, but has introduced a great deal of modern vitreous decoration to the writer, including, besides those already alluded to in St. Paul's, Brighton, several interesting specimens of windows carried out by Hardman under the eye of Pugin.

One of these, the great south transept window of Sherborne Abbey, belongs to the period—1848-51—when the rich Perpendicular nave and crossing of this, the finest of Dorsetshire's three minsters,* was being restored by Richard Carpenter.

To have secured so excellent an illustration of this remarkable work of collaboration is, of course, very gratifying, and Mr. Chaffin, of Sherborne, deserves great praise for his skill in this difficult department of photographic art. Unfortunately



The Te Deum Window in Sherborne Abbey.

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* The other two being Wimborne and Milton. The latter contains a Radix Jesse in stained-glass of the Hardman-Pugin fabrique, but not having seen this window, the writer cannot offer an opinion on it, having no data before him on which to form one.

the subject chosen for this position was the Te Deum—unfortunately, because that subject requires a window of an uneven number of lights for the proper display of the Majesty demanded for its complement.

Judged by the excellence now attained by the art, this Te Deum window at Sherborne would perhaps not be thought very highly of, but bearing in mind not only the interesting associations environing its insertion, but the fact that its conception and execution dates back into the forties, when the revival of glass painting's true principles were in their infancy, we must allow that this is a remarkable work indeed. Although there is a great deal of positive colour in this window its presence is not felt in any disagreeable degree, the skill of artist and executant having neutralised it by their judicious use of white in the features and in the scrolls which, inscribed with portions of the hymn, the ninety-four half-figures are depicted as holding. In the opposite transept stands the organ, very cleverly and grandly treated, as Carpenter's organs always were—that in St. Mary Magdalene's, Munster Square, for example.

Sherborne Abbey from the South-West.

Ottery St. Mary Church, from the South-East.

Standing at the east end of the south aisle of this imposing cruciform structure, whose Perpendicular ensemble is, as regards the nave and crossing, transmuted Norman, with just the Winton-like piers of its lantern peeping out ostensibly, the feast of colour presented to the eye in looking across the choir is truly superb. This portion of the building, one of the most beautiful works of its age (temp. Henry VI.), was restored—splendid individual munificence being forthcoming—a few years later than the nave and transepts under Mr. Slater, by whom the works left unfinished at Carpenter's death were carried out, the reconstruction of its vaulting, which is neither squat like St. George's, Windsor, nor thin like St. Mary Redcliffe, nor verging towards Renaissance like King's College Chapel, Cambridge, constituting a feat of engineering daring. Few English choirs can show such an assemblage of colours as this of Sherborne since the completion of its restoration in 1858, incendiary causes tending to impart a deep crimson glow to portions of the stonework, the very excellent glass of Clayton & Bell in the great Perpendicular windows of the clerestory—to be mentioned with greater particularity hereafter—and Crace's delicate colouration adding their quota to the truly gorgeous ensemble.

There is other glass by Hardman in the abbey—in the great nine-light west window, where standing effigies of Old Testament characters compose a species of Radix Jesse, and in the north aisle, where single figures under canopies have suffered terribly from insufficient burning, many portions, particularly the faces and legends, being almost entirely obliterated. But all these windows, which in all probability belong to the period immediately subsequent to Carpenter's restoration of the nave, if not forming part of that work, are surpassed in quality, if not in interest, by those which, during the same tour, came under the writer's notice in that extraordinary architectural puzzle, the Collegiate Church of Ottery St. Mary, so remarkable for its transeptal towers, imitated most probably from those doing the same duty in the mother church of the diocese.

Executed as they were immediately under the eye of Pugin, or carried out in the same spirit after his demise, many of these windows at Ottery are very interesting, inserted as they were between 1848 and 1852, when the imposing structure in question was passing under the hand of the late Mr. Butterfield for restoration, a work which, characterised as it was by little or none of that recklessness that formed so sad a feature in that gentleman's career subsequently, attracted a great deal of notice at the time for the beautiful and reverent spirit with which, in the face of difficulties that at the outset seemed insurmountable, it was prosecuted.

Either transeptal tower of this anomalous piece of Devonian Pointed has its eastern side pierced with five very narrow lancets, which externally look as though they had been cut out of a slightly projecting piece of gabled walling.

The glass in the northern quintuplet—Pugin's own design—is intended to symbolise the worship of the Spotless Lamb by the whole Church, as described in the fourteenth chapter of the Book of Revelation, the Epistle for Holy Innocents' Day. The extreme narrowness of the lights precluding any very grand or broad treatment of such a subject—much, of course, being left to the imagination—we have in the central lancet, within a medallion upon pretty white quarries, the Lamb standing upon the Mount from which issue the four streams of Paradise. Above this are the heads of the Blessed Virgin and St. Joseph, and below those of St. John Baptist and St. Augustine, all placed in pairs, as are those in the lancets on either side the central one of various saints representing the different orders of the Church.

Tenbury. St. Michael's Church and College.*

North Side of St. Michael's Collegiate Church, Tenbury.

Passing into the choir, closed by a tall, heavy-looking stone reredos of Mediæval character, but tampered with by Blore before Butterfield's appearance on the scene, the clerestory windows claim attention, not only on account of the Pugin-Hardman glass with which they are all equipped, but by the peculiar, one may say unique, character which they assume—an arch equilaterally triangular in shape enclosing three straight-sided and trefoliated lights, of which the central one rises to the point of the containing arch.

The stained-glass here represents subjects relating solely to our Blessed Lord; those on the north side with scenes from His life in suffering, those on the south from His life in glory.

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* For this photograph the writer is indebted to his friend, Mr. F. Macgregor, an old Tenburian.

The Crucifixion window at the east end of the northern range, and that of the Majesty confronting it in the southern one, were in position before Pugin's death, and although in several places the features have suffered from the same cause as those in St. Mary Magdalene's, Munster Square, and Sherborne Abbey, yet it is impossible to view these two specimens of the vitreous art at Ottery without a perception of the conscientious, thoughtful and elaborate care which that artist threw into everything destined for the embellishment of God's house. Certain of the tinctures are truly superb, and recall in depth and richness those employed by O'Connor under the same able superintendence at St. Saviour's, Leeds. Pugin's aim in these clerestory windows at Ottery was to place a subject in the central light and a single effigy in either side one, rejecting all fussy canopy-work and allowing the positive tinctures to flash forth with a jewel-like brilliancy from simple white grounds. In the Crucifixion window a blue in St. Mary's robe and a pale green in that of St. John struck the writer as more than ordinarily remarkable for beauty and delicacy.

The Crucified is represented within a pointed aureole and has a purple cincture, while above the rood two angelic figures are seen hovering. In the southern range of windows that representing the Transfiguration may be singled out as especially good in drawing and tincture.

The writer is unable to say with precision at what date the glass in the first four windows of the clerestory counting from the west at Ottery was inserted, but to judge from their style it was in all probability between 1852 and 1860. Pugin, there is no doubt, had drawn up the whole scheme, whereby that uniformity which in such a position is so desirable has been happily maintained.

Strictly speaking the choir of Ottery St. Mary Church has six bays, but the easternmost is behind the reredos and forms an entrance to the procession path * intervening between it and the lady chapel, the eastern window of which is another specimen of Hardman's work possessed by this church—a memorial to a member of the Coleridge family, to whom the renovated character of this noble pile owes so much. The late Mr. Henry Woodyer was responsible for the restoration of this portion of the fabric. The window was inserted in 1855, and represents the Te Deum, but, like the great one just described in the south transept of Sherborne Abbey, labours under the defect of having no central light, being a very broad composition of eight foliated divisions with the heads of the lights all running up to that of the containing arch, and therefore—it must be reiterated—but ill-suited for a subject requiring a central figure such as does the Te Deum. As at Sherborne, the subject is composed of a number of half figures bearing scrolls, and seen as the writer saw it, in the calm light of an early June evening about eight o'clock, looked particularly soft and beautiful. Whether or no it was designed by Pugin, this window certainly bears the impress of that master.

Mr. Woodyer, who, as just mentioned, was entrusted with the restoration of this lady chapel at Ottery, seems to have been not a little influenced by the fenestration of the choir clerestory, since he adopted it in one of the most sumptuous of the numerous buildings which in his own peculiar edition of Middle Pointed he sprinkled over England during the half-century of his career—the church and college of St. Michael, built a short distance from Tenbury for the late Rev. Sir Frederick Gore Ouseley.

The munificent founder of this charming architectural group, many of whose windows are enriched with Hardman's glass, was the son of the famous Orientalist and British Ambassador at the Court of Russia. Born in 1825, Ouseley at a very early age evinced a passion for music. Upon the death of his father in 1844 he succeeded to the baronetcy. Taking orders in 1849, he joined the Rev W. J. E. Bennett's staff at St. Paul's, Knightsbridge, and St Barnabas, Pimlico; but in consequence of the temporary desecration of the latter beautiful sanctuary by the anti-Puseyite riots of 1850-51, and the subsequent resignation of its incumbent, Ouseley quitted that scene of his early ministry, and after a brief period of foreign travel settled down at Langley Marish, in Buckinghamshire. It was through the instrumentality of Ouseley that the musical services at St. Barnabas, Pimlico, acquired their high but short-lived reputation as models of the Anglican and Gregorian systems in combination, though Sir Frederick, who had little or no sympathy with the latter school, subsequently discarded it almost entirely. Taking up at Langley the thread which had been broken at St. Barnabas, Ouseley gathered round him in that quiet country spot many of his old choir members, and thus formed the nucleus of that foundation school for choristers which a few years later blossomed into the noble church and college of St. Michael, built upon property of his own in a delightful spot known as the Old Wood, about two miles from the quiet old Worcestershire town of Tenbury.

Here boys receive a sound education, a certain portion of their number being engaged twice daily, to the accompaniment of one of Willis's finest organs, in the interpretation of that choral service which it was the desire of the founder to secure. Admirers of the cathedral style of service finding themselves in this delightful locality will be gratified by attendance at St. Michael's, whose style of architecture harmonises so perfectly with the music sung in it, and which is always drawn from the best and purest English sources. Sir Frederick Ouseley died suddenly in Hereford, April 6, 1889. He had succeeded Sir Henry Bishop as Professor of Music in the University of Oxford in 1855, becoming Precentor of Hereford Cathedral in the same year and Canon thirty years later. He was himself a church composer of the highest order—indeed it would be difficult to find the weekly music list of any well-ordered English cathedral without a service or anthem from the pen of this accomplished man and charming personality.

But this chapter of our subject having already exceeded its limits, some account of St. Michael's Collegiate Church and its architect must be reserved for another issue.

> There side by side the church and college stand,
> A noble work, to God's own glory raised;
> Here daily, by the clear-voiced, white-robed band,
> Is the Most Holy Name in chorus praised.
> Here heavenly music spreads her wings o'er all,
> And sanctifies the drudgery of life,
> Restraining with a sweet ennobling thrall
> Young ardent spirits—arming for the strife
> Of after life, by storing memory
> With holy words, for ever fixed there
> By the strong power of sacred harmony.
> Here lingers still the founder's selfless prayer,
> That heaven amid these walls young souls might bless,
> And lead in paths of peace and holiness.

THE REARRANGEMENT OF THE LOUVRE.

A CORRESPONDENT of the *Times*, describing the rearrangements of the pictures in the Louvre, says they amount to a reorganisation of the whole galley, planned on a more or less logical system, carried out with such thoroughness as was possible, and made memorable by the addition of the magnificent Salle Rubens, round which are gathered a whole series of small recessed rooms, which enable the Dutch pictures to be hung in the manner which has found favour at Dresden, Munich and elsewhere. All that is possible within the limits of a single article will be to give a brief account of the principal changes; for, indeed, to describe them with any completeness will require what has been so much wanted, a complete new catalogue. We may assume that the illustrated and rather fancifully arranged catalogue of M. Lafenestre, which is all that has for a long time been procurable, is now in process of being rearranged like the pictures themselves. At present it is misleading to an irritating degree.

The Salle Rubens and the adjacent rooms were opened by President Loubet early in the summer, and this marked the completion of a great work which had been in progress for several years. The Salon Carré and the adjacent Salle des Primitifs, together with the eastern end of the great gallery, were first taken in hand; then followed the middle and western portions of the great gallery, together with the adjoining rooms where for some years past we have been able to study the English, German and Early French schools; and finally, by way of crowning the edifice, the new and splendid gallery which is to do honour to Rubens was thrown open, and the reorganisation was complete. The visitor who wishes to go straight to this room, and to avoid the walk along the whole length of the great gallery, must turn to the right as he enters the principal door; but for present purposes it is necessary to begin with the Salon Carré. That famous room, which since 1851 has been a sort of sacred temple of the arts, and every corner of which has long been familiar to students and amateurs from all over the world, is now greatly changed. Formerly it was supposed to contain the pick of every school; here Giorgione hung close to Holbein, Raphael to Rembrandt, and, strangest of all, Leonardo to Terborch. It cannot be said that the principle has been entirely changed, for the room still contains a mixture of schools; but the mixture is not so great as it was, and, what is more, very many old favourites have disappeared. As the idea of the whole rearrangement of the Louvre has been to carry out with much greater strictness the classification by schools—to hang the Tuscan pictures together, the Venetian pictures together, the Spanish pictures together, and so on—many of the contents of the Salon Carré have been taken to the places that belong to their nation. Gone is the great Murillo, which used to be reckoned one of the most popular pictures in the world; gone is Holbein's "Erasmus;" gone the Terborch and the Metsu and the Gerard Dou; gone Rembrandt's exquisite little "Supper at Emmaus," "The Carpenter's Shop," and everything else of the master except the "Portrait of Hendrickje;" and what is left is almost exclusively Italian, save for the presence of the little Infanta of Velasquez, the Rembrandt above mentioned, the Foucquet, and a few other French pictures. The "Monna Lisa" of Leonardo still smiles mysteriously from her old position, and the wonderful Giorgione and Correggio's "Marriage of St. Catherine" hang on either side of her, though, strange to say, the "Virgin of the Rocks" is left in the Long Gallery. This Long Gallery itself is, as we have said, much more accurately divided according to schools than used to be the case; we have the Venetians nearly all placed together, then the Milanese—among which is Solario's "Vierge au Coussin Vert," a lovely picture which used to be thought worthy of the Salon Carré—then the Florentines, and so on through the late Italians to the Spanish, the German, the English, Dutch and Flemish schools. It must be frankly admitted that the pictures which have been left here or transferred hither are unfortunate, for not only is the lighting of the gallery unsatisfactory, but its vast tunnel-like shape is fatal to anything like a decorative arrangement, and is therefore fatal to the full enjoyment of the pictures. Take Holbein's little "Erasmus," a gem of the first water, a profile portrait about two-thirds the size of life. To be thoroughly enjoyed it should be seen in the appropriate setting of some little cabinet; it is lost in a vast gallery. However, the gallery is there and must be utilised for the pictures, and it is no use protesting that the one is unsuited for the other. It may, however, be permitted to an English visitor to express his regret that the English pictures have been removed from the room which used to be theirs, and where they looked fairly well. At best they do not form a worthy and representative collection, and they will not until some rich man, combining a love for English art with a love for the city which, after all, is the capital of the arts and the meeting-place of art lovers from the whole world, shall present the Louvre with a Reynolds, a Gainsborough, a Romney, a Turner and a Constable that shall do justice to those great names.

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* The clerestory window on either side this retrochoir has some pretty pattern glass, also superintended by Pugin.

We pass rapidly through the last section of the great gallery, which still contains a number of important Flemish pictures, and enter the first of the two great new rooms that are consecrated to that school. Here are Rubens and his followers, especially Vandyke; by the former, three of the great Medici series and the noble portrait of Henry de Vicq, the archduke's ambassador in Paris, through whom Rubens obtained the commission for painting the life of the queen. After passing through various collections, this picture came up for sale in 1850 with the rest of the King of Holland's gallery, when the French Government very rightly purchased it. But Rubens may wait till we enter the next room, which is specially his, though the three Medici pictures for which space could not be found there are well worth attention, if only for the sublime audacity with which the painter has laid under contribution the remains of Classical antiquity, even copying the Apollo Belvidere, and pressing him into the service of the Queen of France. At the end of the room Vandyke appears in great magnificence, for the famous Charles I., transferred from the Salon Carré, here occupies a panel by himself, flanked by the beautiful pair of groups, "A Gentleman and his Son" and "A Lady and her Daughter," which are as fine as anything that remains from the painter's second Flemish period. These pictures gain enormously by their removal from the Long Gallery; and the same may be said of the beautiful group, of the English period, called "The Duke of Bavaria and his Brother," which could never be properly enjoyed till now. There can be little doubt that the large "Crucifixion" which hangs opposite the Charles I. and which still bears its old attribution to Rubens is an early work of Vandyke's. It closely resembles the damaged picture, belonging to a Catholic church in London, which we saw at Burlington House last winter, and both in colour and in expression it belongs rather to the precocious pupil than to the master. The master, however, can well afford to give up this picture, for as we descend the few steps into the vast Salle Rubens close by he appears in a plenitude of splendour which, if these eighteen pictures were his only achievement, would be enough for the glory of any man.

It may be said with perfect truth that this Marie de Medicis series is now for the first time seen as it ought to be seen. In the Luxembourg Palace, for which Rubens painted the pictures, there were many cross-lights, and when Napoleon III destroyed the gallery to make room for his Senate and brought the pictures to the Louvre, they were hung so high that nobody could see them. Now they have found a worthy home, in a room measuring about 170 feet by 55 feet, where, fixed against the walls and surrounded with splendid frames, they stand out as the most gorgeous example of pagan decoration that the world contains. Pagan—that is the odd part of it; for here at the beginning of the Thirty Years' War for religion we have the Catholic Rubens painting the life of a Catholic princess, and reviving in her honour, not the theology of the Church and the story of Palestine, but the theology of Olympus and the allegories of the poets of Greece and Rome. The Fates weave the destiny of the queen; Lucina presides over her birth, Minerva over her education; under her government Apollo (copied from the Belvidere) shoots down her foes; her husband has an Olympian apotheosis; and, greatest joke of all, when Rubens paints the queen's reconciliation with her son he shows us the Cardinal de la Rochefoucauld, in full canonicals, conducting to the queen a nude Mercury, who offers her an olive branch. Well, these were the ideas of the seventeenth century and of the French monarchy, and their legitimate outcome was Louis XIV. and Versailles. From the point of view of art, of course, it is not so much the allegorical machinery of Rubens's pictures that we have to look at as the composition, the colour and the exuberant life which they express. Naturally they were not entirely painted by him; they were all done in four years (1621-25), and this implies that the best part of his atelier was set to work upon them. To see his own individual treatment of the story we have to go to the gallery at Munich, which contains most of the sketches; but if Rubens did not paint more than a portion of the finished pictures it is certain that his hand can be traced in many parts of them—in the face of the queen, for instance, in such a picture as "The Birth of Louis XIII.," and in many of the details of what is probably the finest of them, "Marie de Medicis landing at Marseilles." As a whole the series as we now see it forms the grandest and most complete display of his genius, and is as much the standard for judging him as the Stanze of the Vatican are the standard by which we judge the genius of Raphael

In the little side-lighted rooms which surround the great Salle Rubens are gathered together, in approximately chronological order, nearly all the Dutch and some of the Flemish pictures from Van Eyck downwards. Those which form part of the Lacaze collection have also been brought here, but they are kept by themselves, in accordance with the intentions of the testator. On the whole the new plan is a great improvement on the old; and in regard to the small pictures, whether genre, landscapes, or portraits, there can be no question that they look infinitely better than they did in the Long Gallery. There may be a doubt, however, with regard to the larger pictures, such as the well-known group by Frans Hals, the more important landscapes, the magnificent de Heem (which now as of old is inadequately seen) and most of the Rembrandts. It is a pity, indeed, that in the case of Rembrandt two of the little rooms could not have been thrown into one; a master so strong as he requires a certain space to make his full effect. However, the general improvement is indubitable, and the new arrangement has been made with a due regard to art history as well as to æsthetic satisfaction. In the first little room, the Salle Van Eyck, everything yields to the celebrated little "Vierge au Donateur," which has for years been one of the gems of the Salon Carré; the next Salle, which bears the name of Antonio Mor, contains his fine picture—as strong as a Velasquez—the "Dwarf of Charles V.," together with various Breughels, of which the terrible but very powerful "Parable of the Blind Men" is the chief. We then pass to the Salle Frans Hals, containing the famous "Portrait of Descartes" and three great pictures of the Beresteyn family which the Louvre was fortunate enough to buy at Haarlem not so many years ago for a very small price. Two are damaged to a certain extent, but the man's portrait is a masterpiece; and in looking upon it an Englishman remembers with dissatisfaction that, in spite of the multitude of chances which our National Gallery has had during the last twenty years, no Frans Hals above the third class has found a place there. It is the greatest gap in our gallery, and though we cannot now fill it without paying pretty heavily, it ought to be filled. The next room does justice to Van Goyen; those that follow are named after Ostade, Ruysdael, Hobbema, Jan Steen and Cuyp; and afterwards we come to the Rembrandts and to the pictures brought from the Lacaze collection. It is not necessary to go further into details, but we may say that the genre pictures, in which the Louvre is so rich, look extremely well here, but not nearly so well as they would look if the administration were not so morbidly afraid of cleaning their pictures. Because two of the Beresteyn Hals have been spoilt by clumsy restorers, because the pictures at Vienna and Antwerp have in too many cases been skinned, it does not follow that the finest Metsu in the world should be left under a thick coat of discoloured varnish, or that the effect of Ruysdael's magnificent sea-piece should be spoilt by leaving it spotted with the stains of old restoration. Most of the Dutch pictures in the Louvre are essentially in as fine condition as those in the Peel collection in the National Gallery, but they do not make half the effect—nay, they do not do half the same justice to the reputation of the men who painted them—because the brown varnish has not been removed. But to carry out the work properly requires two things—a first-rate conservative restorer, and an administration strong enough to hold its own against ignorant people who are sure to set the Press in motion against any change they do not understand.

THE ANCIENT CITY OF SALZBURG.

Of the smaller cities on the Continent, writes a correspondent of the *Glasgow Herald*, there are few more interesting than Salzburg, and few more beautiful and picturesque. Yet, strange to say, it is a city little known to the British traveller. The American knows it well, for to him it has a special attraction—an attraction similar to that possessed by Boston in England; that is to say, it is the name-place of one of the early American colonies, and it sent across the Atlantic the seed from which that colony sprang. This emigration constitutes an interesting historical incident and may be referred to later on in connection with the story of Salzburg. In the meantime it is to be taken as the explanation of the fact that for one British traveller met in the streets or hotels of this quaint old-world city you meet ten Americans. In the principal hotel there is a special American bar, where sherry cobblers, gin slings, and other Transatlantic drinking mysteries are dispensed, and where only English with an accent is heard. The Austrians themselves are quite alive to the virtues of Salzburg, and so also are the Germans. In the summer months they crowd there, and even in the winter time they are beginning to use it as a resort, for the climate of the place, in spite of the high level, is very reliable, the sanitation is practically perfect, and there is always a tolerable amount of society. A fashion is now setting in of using Salzburg as an after-cure—that is to say, as a place where people go for rest and more generous treatment after taking the waters at Carlsbad or Marienbad or other famous Bohemian spas. This fashion, it need scarcely be said, is carefully fostered by the hotel and pension keepers.

The position of Salzburg is distinctly interesting. It lies a little beyond the southern extremity of the great plain of Bavaria, and controls the long and tortuous valley of the Salzach. It has hills and mountains all around, the former close to the city—one actually within its boundary, and the latter some miles distant. This hill within the boundary is capped by a fortress called Hohen-Salzburg, whose history is practically the history of the city. Without troubling about evidences of a Celtic settlement, or even about the work of the Roman conquerors, one may say that Salzburg has been chiefly under the rule of archbishops, who maintained their valuable property against all comers, whether king or prince or prelate. They kept the fortress prepared for all emergencies, never knowing whence attack might come, and the people, grateful for the protection thus afforded, gave them liberally of their goods and money. At the time of the Reformation the doctrines of Luther found their way into Salzburg, and obtained sympathy not only with the common people, but also with some of the councillors and preachers. The archbishop, alarmed by the state of things, called in outside aid and took the city by storm, and imposed upon it serious exactions and disabilities. These so incensed the populace that they rose in revolt, besieged the archbishop in his own fortress of Hohen-Salzburg, and compelled him to ameliorate their lot. This, of course, did not end the trouble. There were more sieges and more revolts, and one archbishop after another struggled to put down the Lutheran doctrines. The greatest religious disturbance and the one which is associated with the emigration to America took place in the time of Archbishop Anton Freiherr von Firmian, who, in the hope of converting the Lutherans, called in the aid of the Jesuits. Acting on their suggestion, he issued an edict in 1731 by which the followers of the new faith lost their property and citizenship, and were compelled to emigrate. This resulted in the famous Salzbund or Salt Covenant, the signatories of which gave token of their adhesion to the principles of the Reformation by licking salt, and in the emigration of more than 30,000 people. Most of the emigrants went to Prussia, where they were well received; others went to Bavaria and Suabia, and others again to Georgia in America, where they founded the Salzburg colony. Losing of its best in this way, Salzburg sank into a state of feebleness and poverty; and when in course of time the Napoleonic wars broke out, the reigning archbishop found himself without means of defence, and incontinently fled, leaving his little State to be the plaything of the great contending Powers. By the peace of Pressburg it was handed over to Austria, by that of Vienna four years later to Bavaria, while in 1816 it was returned to Austria. Under the rule of Austria the city and Crown land of Salzburg have developed greatly, and, indeed, have become one of the most flourishing provinces of the Austrian empire. Salt is the chief industry of the district. It is made and sold by the Government, and proper railway communication having in recent years been established, also by the Government, the salt is conveyed for sale to all parts of the empire, and more and more miners are being employed every year. Another important industry is peat. There are two large moors with practically inexhaustible stores of peat—one to the north of the city, and the other extending from a point near the fortress to the base of the Untersberg range. The peat-cutters are a well-organised body of men; they live in houses on the moors, and they work for good wages, and appear to be extremely prosperous.

These facts of history and of local industry are mentioned from a sense of duty. They are not things in which the present-day Salzburger takes very much concern. When he shows round a visitor and seeks to impress him with the city, he points to its beauty of situation, compares it with Constantinople and Venice, describes with pride the magnificence of the new Kurhaus and the unsurpassable loveliness of the Mirabell Gardens, invites you to enjoy the shade of the leafy walks by the Salzach, and having got you there whispers in your ear that, unconscious as you may be of the fact, you are within a stone's throw of the birthplace of the immortal Mozart. About the Lutheran schism, as he calls it, the modern Salzburger has very little thought. If he were forced to give an opinion he would probably say that the Lutherans got no more than they deserved—the torture of the rack in the Reckthurm of the fortress, the emigration, the confiscation of property, all included; for be it remembered, Salzburg is now a strictly Roman Catholic city, just as the house of John Calvin in Geneva is now a Roman Catholic chapel. Without going so far as to say that in the matter of beauty of situation Salzburg is comparable with either Venice or Constantinople, there can be no doubt that it is very fine. The horizon is bounded at every point by hills or mountains, all more or less picturesque in aspect. They crush in upon the city, and in consequence some of their slopes are built upon. At night, therefore, when the lamps are lighted the scene is one of extreme loveliness, and not unworthy of the enthusiasm and rapture with which it is regarded and described. The Monchsberg is within the city boundary. It consists of a series of points, on the chief of which appears the fortress of the archbishops. The Austrian Government has put some soldiers into the fortress, so that the military aspect of the place is maintained in a sense, but it is mainly used as a look-out for visitors and for the Salzburgers themselves, who never tire of going up the hill and surveying their beautiful city and surroundings. The lower peaks of the Monchsberg are wooded, and as they are linked together by a sort of ridge they make an agreeable promenade. On the opposite side of the river rises the Capuzinerberg, a hill considerably higher and more difficult to climb than the Monchsberg. This hill seems to belong to a Capuchin monastery. At any rate it is necessary to ring the monastery bell and pay a fee to the monks before you can climb it. At the top there is a good view of the city of Salzburg and the great plain of Bavaria. Behind the Capuzinerberg there is the Gaisberg, which, roughly speaking, is the same height as Ben Nevis. To get to the top of the Gaisberg there is no need to walk, a rack and pinion railway or zahnradbahn having been constructed some years ago. The view is the most extensive of all, and by the Salzburgers is compared with those of the Rigi and the Pilatus in Switzerland.

Coming down from these heights to the streets of Salzburg one finds points of interest at almost every turn. The buildings have suffered not a little from fire, as is usually the case where wood is largely employed in construction; but neither fire nor time and its changes have altered the old-world quaintness of the place. It is not so rich in colour as Nuremberg, nor yet so varied in its outline, but in beauty of individual work, in fine carving, elaborate ironwork, and so forth, it may be put before the German town. There is street after street like the Canongate of Edinburgh before the Improvement Trust, the houses still being occupied by reputable citizens. In the neighbourhood of the Residenz Platz there is a whole congregation of public and private buildings of surpassing beauty, all of them of great age. The residence itself was erected about the end of the sixteenth century, and is occupied by the Grand Duke of Tuscany, who no doubt finds it a most desirable home. The cathedral close by was built a few years later. Behind the cathedral lies the burial-ground of St. Peter, with the church of St. Margaret in the centre of it. The vaults are cut out of the rock, the base of the Monchsberg. Beside the vaults are two ruined chapels, one of which dates away back into pagan times and looks quite as old as its reputation. It is out of the question, however, to attempt to catalogue even all the old buildings, and perhaps it will be well to conclude with a slight description of Salzburg's greatest pride, namely, the birthplace and early home of Mozart. This is situated in one of the narrowest of the streets—the Getreidegasse, not far from the river front. To reach the Mozart house one has to climb three flights of stairs, for it was in an upper chamber that the great musician was born and lived until he became famous and the pet of princes. Above the door there are lines from Horace, which are thus translated:—"In my house there sparkle neither ivory nor gilt ceilings, but there is honesty and a vein of kindly spirit, and though I be poor, yet the rich come to see me." The appropriateness of the first part of the quotation is appreciated the moment you enter the door. There is no ivory about, nor anything in the way of gilt ceilings, only whitewashed walls and bare floors. The room on which the door opens is the birth-room, and in the far corner a white bust projects itself through the darkness. Attached to the bust there is a card saying "Hier stand Mozart's Wiege"—Mozart's cradle stood here. Near by one finds a grand piano used by Mozart, similar in size and construction to what appears in the famous picture of the Mozart family at practice. Tempted to finger the keys, I discovered that there is plenty of music yet in the old instrument. The same room contains a spinette, which also responds cheerfully to the touch. The walls of this room are decked out with pictures of Mozart and members of his family, playbills, medallions, decrees of appointment, including the decree by which Mozart was appointed in 1787 musician of the chapel at a salary of 80*l.* a year, and some music manuscripts. In another room—the family sitting-room—the exhibits include the watch presented to Mozart by the Empress Maria Theresa, his prayer-book and a number of unfinished compositions. In addition to these two rooms Salzburg boasts another Mozart memorial.

All those familiar with the history of the great composer know that he lived for a considerable time in Vienna. One of his houses there was a little cottage, built principally of wood. In this cottage he completed the opera of "Zauberflote," "The Magic Flute," and when the building was threatened with destruction the idea occurred to some one to have it removed from Vienna altogether and placed in Salzburg. This was done, a site was obtained on the Capuzinerberg, and now the Mozart Cottage shares with the birth-room the devotion of amateurs of music who visit Salzburg.

MADOX BROWN'S FRESCOES.

In a letter to the *Manchester Guardian* Mr. Frederic Shields writes:—Against the prevalent and depressing preference of the English people for the most emasculated forms of fine art, it is animating to note the concern expressed by many correspondents for the preservation of the virile works of Ford Madox Brown, both from wilful injury at the hands of imbeciles and from the evil effects of the smoke-laden atmosphere of Manchester. All who assess these works aright hail gladly the interest awakened by the recent outrage and the expression from many of a warm desire that every possible means should be sought and applied for their prolonged preservation. But, sharing their concern, I beg those who propose that these paintings should be covered with glass to believe me that they are much in error. The first and last condition of their being is that they should be easily visible, and to this the application of glass is fatal. In September, 1896, in compliance with the request of the civic authorities and of the architect, the professor of chemistry to the Royal Academy, Professor Church, and myself inspected the state of these mural paintings. The suggestion that they should be glazed was to the fore then, as now, and by experiment was put to the proof, with such result that even those who had proposed it allowed its fallacy. So covered, the paintings could be seen only in patches, broken up with glistening vacuous spaces or reflections of the forms of the spectators. Nor would the application of glass to these panels be less harmful to the total effect of the noble hall they dignify and adorn, for the first impression upon entering would be that the walls were surrounded with aquarium tanks and the present aspect of mass and solidity would be wholly wiped out.

I have confidence that the citizens may trust their elected representatives at the Town Hall to zealously care for these gifted presentations of the history of their city. By the advice of Professor Church they were at the period before named coated with a solution that interposes a shield against the ill-effects of sulphuretted air, and the substitution of electric lighting for gas affords a further guarantee for their safety in the future. After repairing the malicious hurt done to that wonderful painting of Crabtree's observation of the transit of Venus, my attention was directed to the accretions of dust and smoke that had settled upon the paintings since 1896, and I cleaned the whole series—an operation requiring some delicacy of hand, but otherwise easily performed, since the colours have been protected by the formula aforesaid. Suffer me, sir, I beg you, to add that as in doing this my eye glanced over every inch under my hands' work, admiration and reverence grew upon me for the overflowing lavish wealth of incident and character poured forth from the artist's mind and manifested by his skilful brush. The comprehensive grasp of humanity, the delightful mingling of pathos with humour, the keen observation of natural effects and of men and beasts alike, the breadth and luminosity of the open-air treatment, and the variety and harmony of the colour schemes bound me captive, enforcing my consent to the greatness of the painter, making me grieve the more that some blind themselves to all the glorious capacity for ministering intellectual and sensuous delight visibly manifested in the majority of the works by selecting for captious condemnation the two latest designs, which were carried out in pain and debility so extreme that the heroism of the aged master hardly sustained him to the conclusion of his long task.

EAST RIDING ANTIQUARIAN SOCIETY.

The members of the East Riding Antiquarian Society met at Pocklington on the 30th ult. The weather was fine, and there was a good attendance, among those present being Canon Stanbridge, the Rev. M. C. F. Morris, Mr. George Bohn, C.E., Mr. J. R. Mortimer, Colonel Pudsey, Canon Maddock and the Rev. A. N. Cooper (secretary). The "meet" was in Pocklington Church, where Dr. Leadman, who has long been resident in the town, and has been given to antiquarian pursuits, gave an address to the members on the history of the building.

He stated that the preaching of the Gospel was begun at Pocklington by Paulinus in 607, and that a preaching cross was discovered in the churchyard, which some believed to be contemporaneous with him. A wooden church was first of all built on the site of the present one, and this was replaced in the fourteenth century by the present edifice. The font is a Norman one, though somewhat spoiled by being placed on a very modern elaborate pedestal. The most interesting feature in the church is a triptych carved by Albert Dürer, and brought from Germany by a Mr. Denison, who was formerly lord of the manor. A very curious tablet on the outside of the chancel wall is to one Thomas Pelling, known as the "Flying Man," who lost his life in attempting to fly from the tower of the church. Owing to his assistant slackening instead of tightening a rope he was dashed against a buttress, beneath which he was buried in 1733. The registers date from 1559, and contain the account of the burning of a witch in 1646 and a full account of the accession of James I. as King of England, France and Ireland.

The party next drove to Warter Priory, where excavations were made last year by Mr. St. John Hope. These have been covered in again, but the Rev. M. C. F. Morris, who assisted Mr. Hope, was able to point out the site of the ancient buildings. The present parish church stands on the site of the nave of the old monastery church, and, this being ascertained, it is quite easy to reconstruct all the rest of the buildings, which always followed the same model. The house was an Augustinian one, and the inmates were known as the Black Canons. There was on view the tomb of Prior Brydlington, who died in 1498, and was the last prior but two before the dissolution of the monasteries. The house was fairly wealthy, with a revenue of 221*l.* At the Dissolution it was given to the Earl of Rutland, and in Belvoir Castle there is a full description of the house, with very accurate measurements, made for the purpose of ascertaining the value of the lead upon the roofs. The place is now the property of Mr. Charles Wilson, M.P., and it is thought he may be induced to allow the whole site to be laid bare at some time, when a rich treat will be in store for antiquaries.

This is the last excursion of the year before the annual meeting, which is to be held at Howden towards the end of this month.

The Executors of the late Mr. H. F. Hornby have presented to the Liverpool Corporation a very valuable gift of art treasures, valued at over 30,000*l.* It is to be treated as a separate collection. The sum of 10,000*l.* will be payable to the authorities on the death of the survivor of the executors, to assist in providing a building in which to store the collection, so that it may be exhibited to the public.

TESSERÆ.

Immutable Beauty.

THE disposition and capacity to distinguish and interest ourselves in the true, the beautiful, the good and the great were given us as a rule and law, continually to point out that election and conduct which is most becoming and most conformable to our nature as moral agents, and nothing can be more certain than that the interest we take in all the objects which surround us is (cæteris paribus) in an exact proportion to the number and degree of those qualities, whether considered singly or combined. As to beauty, prudence may and often does incline us to hesitate in our election of the greater or lesser degree of it, in proportion to the association of those degrees of beauty with other valuable or worthless qualities. These ideas of beauty, order and goodness have an intimate and almost immediate reference to each other in the mind, as absolute and complete satisfaction can only result from the perfect union of all these qualities in their highest degree. Therefore it is that the pleasure which we receive in the contemplation of human nature (where beauty may be in a high degree united with those other qualities) is much greater than that which results from the contemplation of beauty in all the species of animal, vegetable or other objects, where moral agency does not exist; and yet, such is the innate force or power of mere beauty even in the lowest order of beings, that the particular perfections discoverable amongst quadrupeds, birds, fishes, trees and flowers are sure to excite in us agreeable sensations and incline us to a predilection and choice of which those irrational beings appear utterly unconscious and insensible. There is, then, a beautiful which is positive, essential and independent of national or temporary institutions or opinions. This immutable and eternal beauty is widely different from those arbitrary, local, temporary notions of beauty which have a kind of occasional currency under the terms ton, fashion or mode; and, like particular languages, are ever fluctuating and unstable, always different amongst the different nations, and in the different ages of the same nation. This false beauty which roots itself in affectation has nothing to do with genuine, legitimate art, and is no otherwise worth mention here than to point it out as a quicksand, where many ingenious artists have been sunk for ever.

The Rotiers.

The Rotiers were a family of medallists. The father, a goldsmith and banker, assisted Charles II. with money during his exile, in return for which the king promised, if he was restored, to employ his sons, who were all gravers of seals and coins. The Restoration happened, and Charles, discontent with the inimitable Simon, who had served Cromwell and the Republic, sent for Rotier's sons. The two eldest, John and Joseph, arrived (not entirely with their father's consent, who wished to have them settle in France, of which probably he was a native). They were immediately placed in the Mint and allowed a salary and a house, where they soon grew rich, being allowed 200*l.* for each broad seal, and gaining 300*l.* a year by vending great numbers of medals abroad. On their success Philip, the third brother, came over and worked for the Government too. He is the only one of the three, though John was reckoned the best artist, who has left his name or initials on any of our medals, and he it was who, being in love with the fair Mrs. Stuart, Duchess of Richmond (vide Evelyn), represented her likeness, under the form of Britannia, on the reverse of a large medal with the king's head. Simon, discontent with some reason at the preference of such inferior performers, made the famous crown piece which, though it did not explode the others, recovered his own salary, and from that time he and his rivals lived amicably together. It was more than they themselves did. John had three sons, the eldest of which he lost; but James and Norbert being much employed by him, their uncles got jealous and left England, Joseph going to France, Philip to Flanders, where each, being entertained by the respective Governments, the three brothers were at the same time in the service of three kings—of England, France and Spain. James Rotier being hurt by a fall from his horse, and retiring to Bromley for the air, caught cold and died. Norbert and his father remained working for the Crown till the Revolution, when, though offered to be continued in his post, no solicitation could prevail on John, the father, to work for King William. This rendering him obnoxious, and there being suspicions of his carrying on a treasonable correspondence, guards were placed round his house in the Tower and Lord Lucas, who commanded there, made him so uneasy that he was glad to quit his habitation. He took a house in Red Lion Square. Norbert, less difficult, executed some things for the Government, particularly, as Vertue thinks, the coronation medal for William and Mary and some dies for the copper money. On the proofs were the king's and queen's heads on different sides, with a rose, a ship, &c.; but in 1694 it was resolved that the heads should be coupled and Britannia be on the reverse. Hence arose new matter of complaint—some penetrating eyes thought they discovered a satyr's head crouched in the king's. This made much noise and gave rise to a report that King James was in England, and lay concealed in Rotier's house in the Tower. Norbert on these dissatisfactions left England, and retiring into France, where he had been educated in the Academy, was received and employed by Louis XIV., where, whatever had been his inclination here, he certainly made several medals of the Young Chevalier.

Colour in Venice.

Venice was the centre of the commerce, the repository of the riches of the globe, the splendid toy-shop of the time; its chief inhabitants princely merchants, or a patrician race elevated to rank by accumulations from trade or naval prowess; the bulk of the people mechanics or artisans, administering the means, and in their turn fed by the produce of luxury. Of such a system, what could the art be more than the parasite? Religion itself had exchanged its gravity for the allurements of the ear and eye, and even sanctity disgusted, unless arrayed by the gorgeous hand of fashion. Such was, such will always be the birthplace and the theatre of colour, and hence it is more matter of wonder that the first and greatest colourists should so long have forborne to overstep the modesty of nature in the use of that alluring medium, than that they sacrificed in part propriety to its golden solicitation. We say in part, for Titian perhaps never, Paolo and Tintoretto, though by much too often, yet not always spread the enchanting nosegay which is the characteristic of this style with indiscriminate hand. The style of Titian may be divided into three periods: when he copied, when he imitated, when he strove to generalise, to elevate, or invigorate the tones of nature. The first is anxious and precise, the second is beautiful and voluptuous, the third sublime. In the second the parts lead to the whole, in this the whole to the parts; it is that master-style which in discriminated tones imparts to ornament a monumental grandeur. It gave that celestial colour which consideration like an angel spread over the Salutation in San Rocco; the colour that wafts its wide expanse and elemental purity over the primitive scenes of his Abel, Abraham and David, in the Salute; the colour that tinged with artless solemn majesty the Apotheosis of the Virgin in the church de' Frati, embodied adoration in its portraits, and changed the robes of pomp and warlike glitter to servants of simplicity. Such is the tone which diffuses its terrors and its glories in Pietro Martire over the martyred hermits of the mountain forest, and taught the painter's eye to "glance from heaven to earth, from earth to heaven."

GENERAL.

The Art Gallery at the Guildhall is being enlarged by the acquisition of a part of the Mayor's Court offices. Various other alterations are in progress.

Mr. Fairman Rogers, who died lately in Vienna, was professor of civil engineering in the University of Pennsylvania, and afterwards presented to it an important collection of books on engineering.

The London and South-Western Railway Company have during the past half-year expended 54,035*l.* on improvements at Waterloo and Nine Elms; 30,532*l.* on the enlargement of Clapham Junction and Windsor stations; 3,400*l.* on station improvements at Basingstoke, Salisbury and Templecombe; 5,233*l.* on the South-Western hotel, Southampton; 1,913*l.* at St. Denys and Eastleigh stations, and 25,860*l.* for the purchase of land at other stations. Waterloo station is to be enlarged on the south side, and for that purpose about 4 acres of property will have to be purchased.

The Rev. Prebendary Barff believes that the culvert found at the base of the Roman bastion at the rear of St. Giles's Church, Cripplegate, was a covered way for communication from within the City walls to an outer barbican situated beyond them, and shown on a reproduction of an ancient map in his possession.

Mr. J. R. P. Wilkinson, C.E., has prepared estimates of cost for the two schemes dealing with the sewage of Manchester. He finds that the experts' scheme may be carried out for 337,713*l.* 5*s.* 3*d.*, and that the scheme enjoined by the Local Government Board will cost 487,283*l.* 17*s.* 4*d.*, a difference of 149,570*l.* 12*s.* 1*d.* The decision of the Council is in favour of the official scheme.

The American Institute of Architects has been presented with some interesting Japanese architectural drawings by Mr. S. Okamoto, of Tokyo. According to the *Engineering Record* they are made with a brush, but the lines are as fine, true and straight as the best straight-line pen work. The drawings are folded on a plan line, so that when the sides, partitions and projections are raised to a vertical position the drawing forms a small paper model, showing both the exterior and interior of the house. Each flap or leaf has drawn on its surface the exterior elevation on one side and the interior on the reverse.

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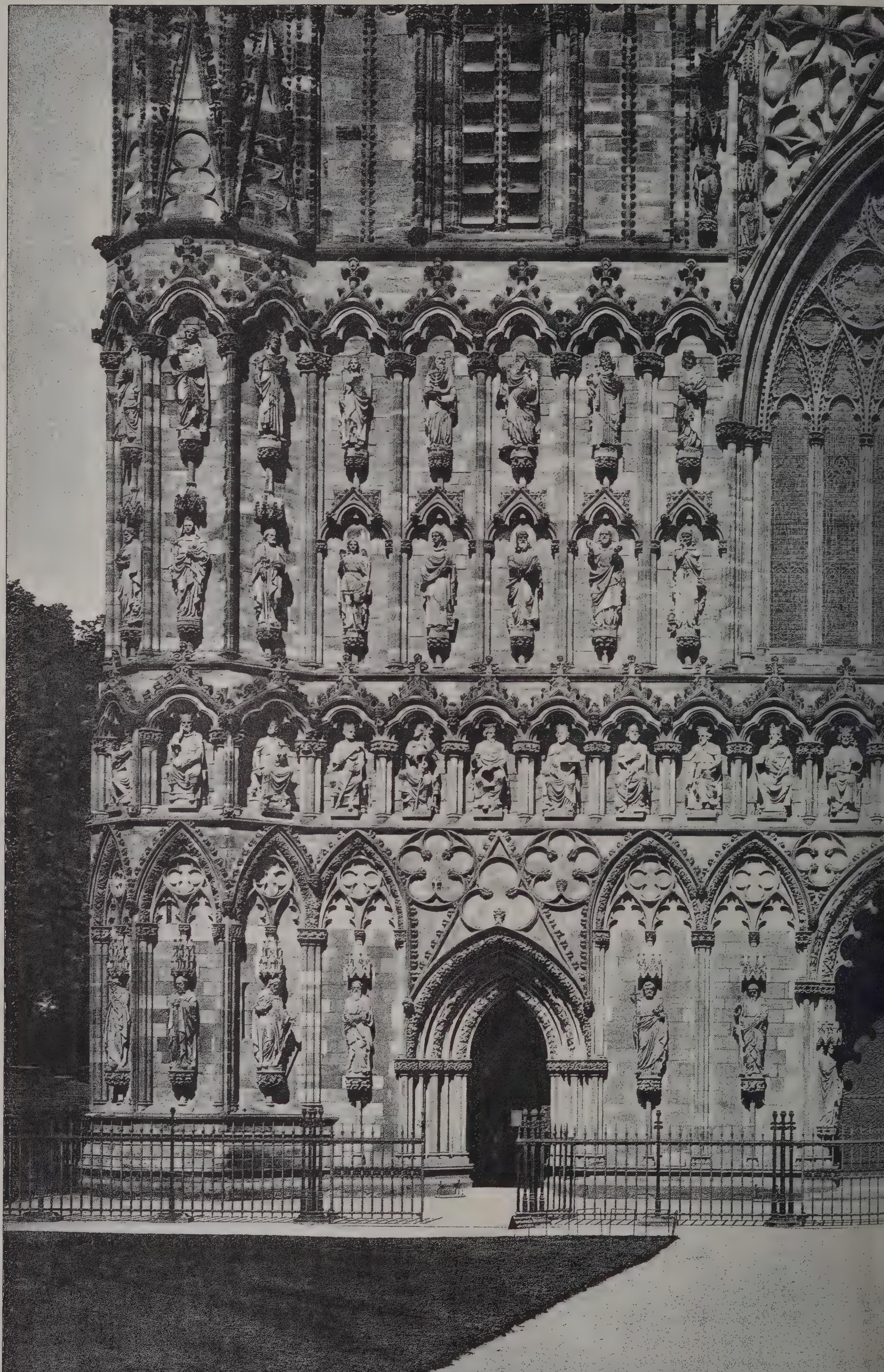

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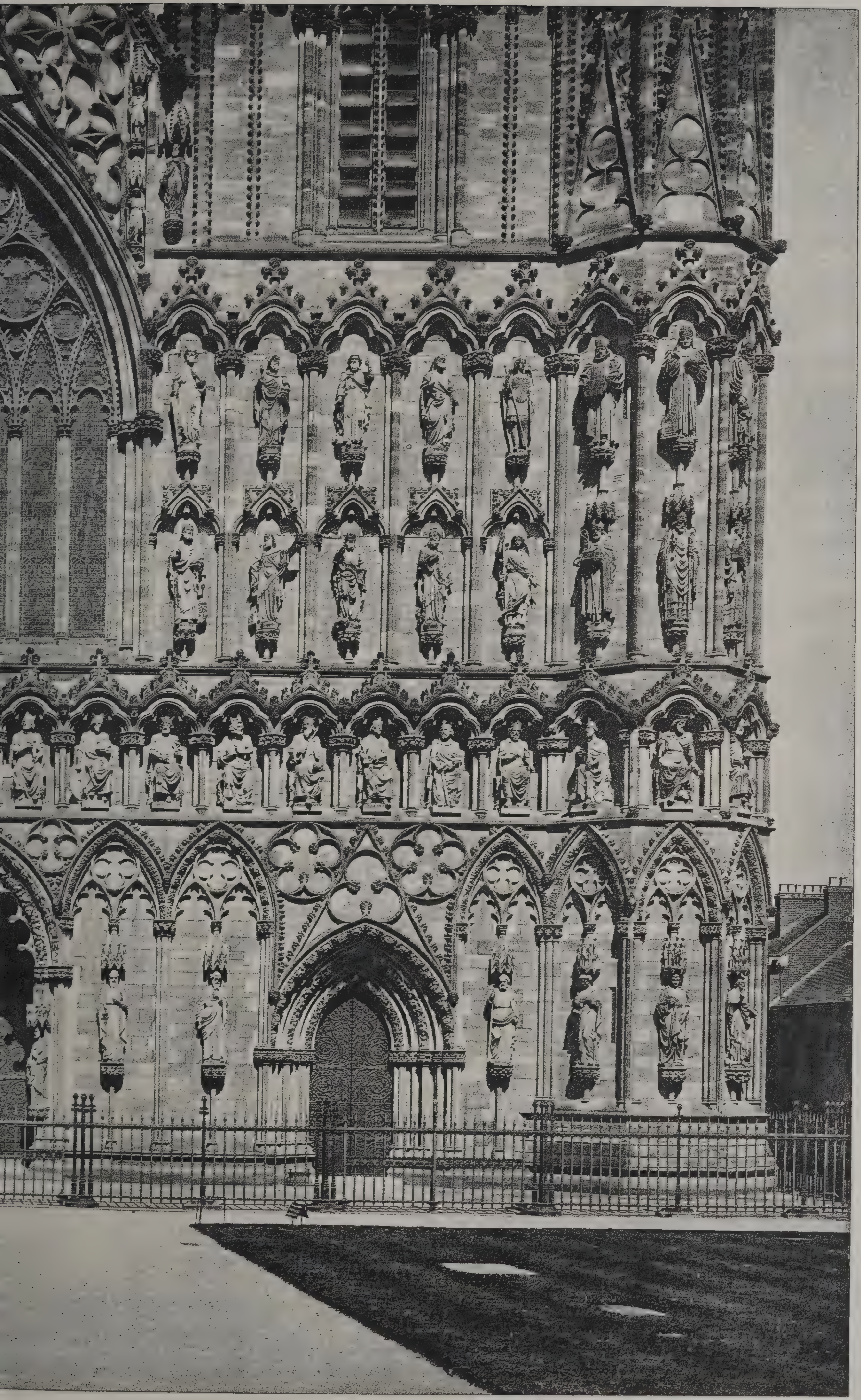

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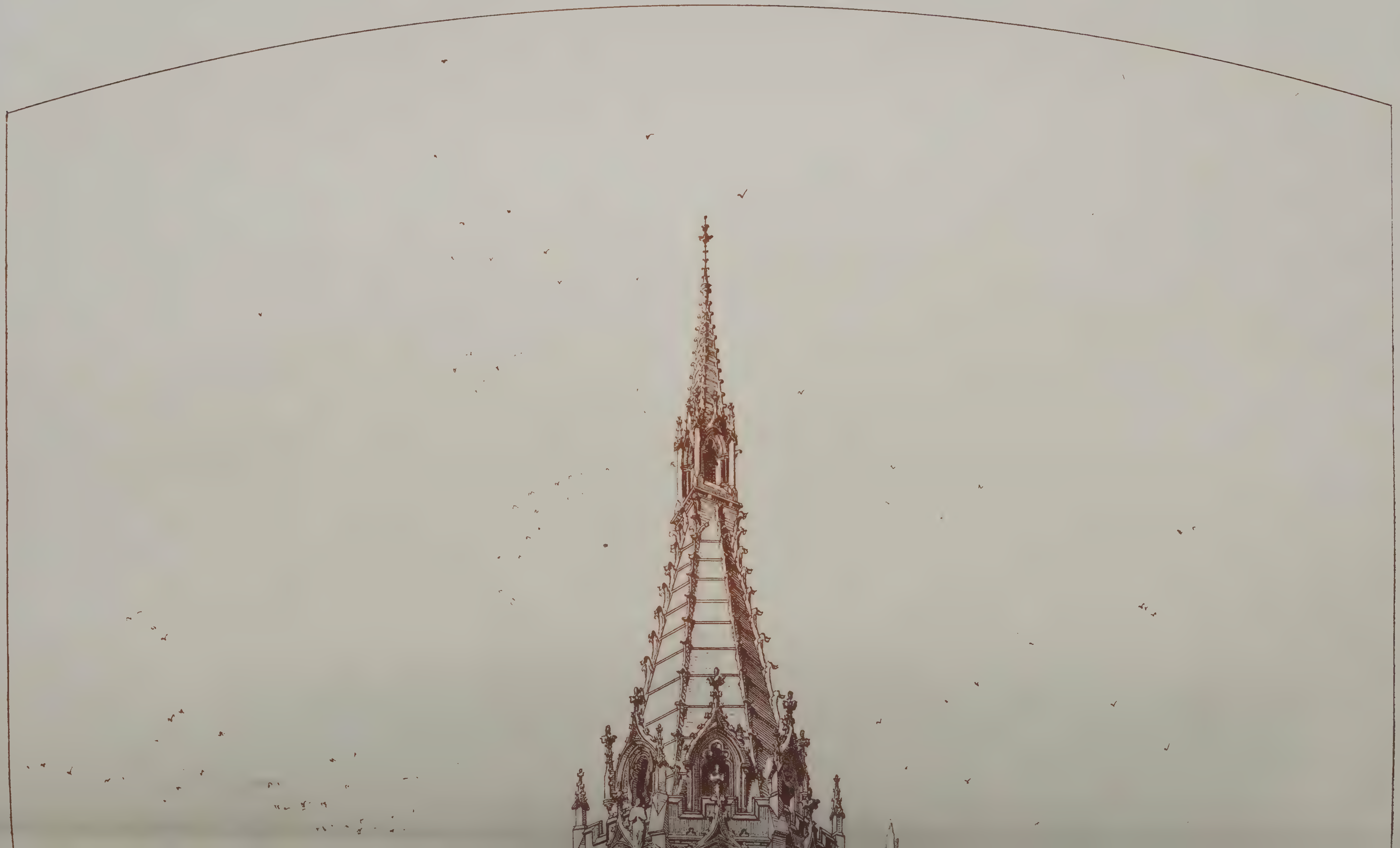

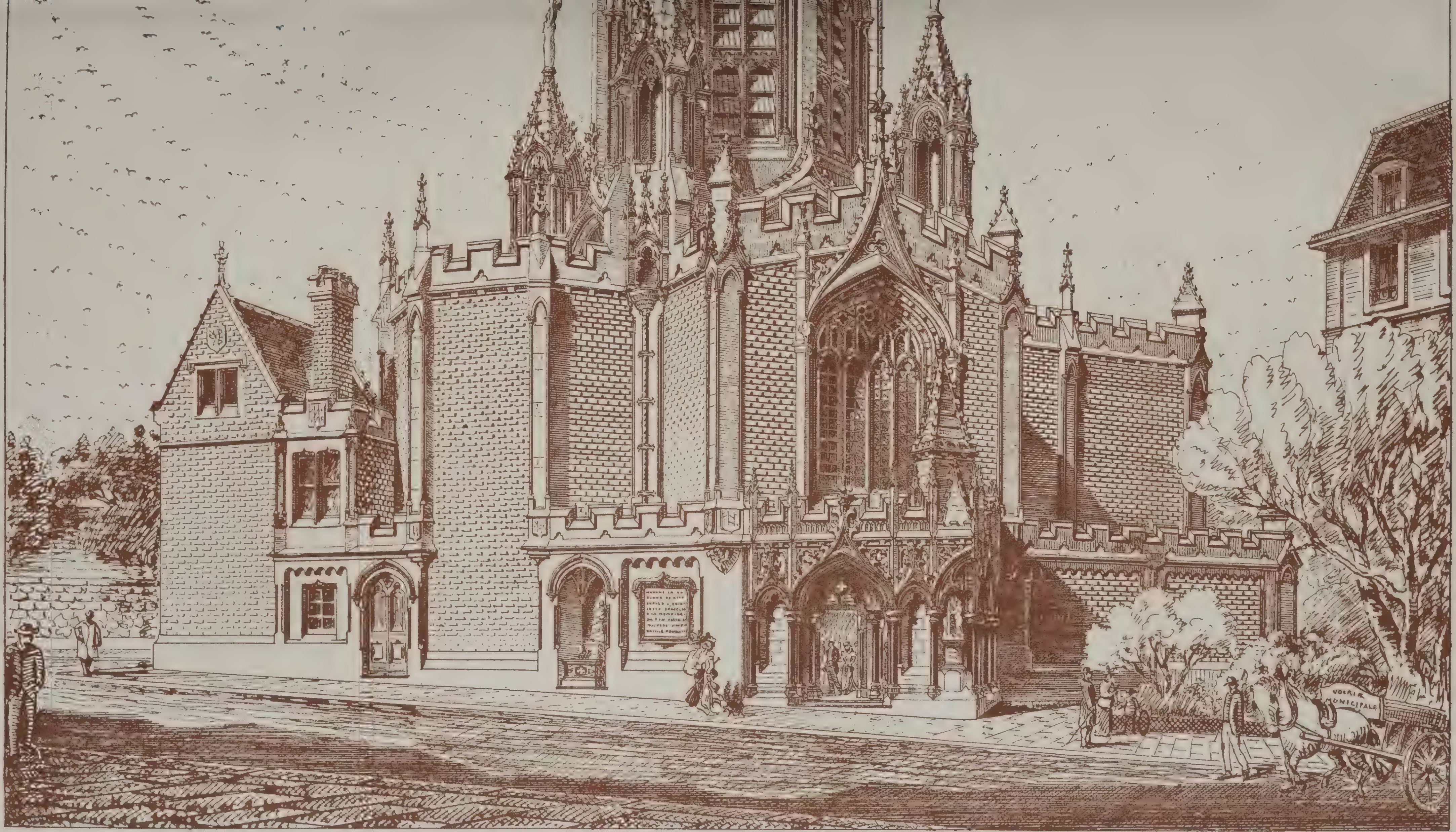

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THE EMPRESS OF AUSTRIA'S MEMORIAL CHAPEL, GENEVA.

LAWRENCE HARVEY, F.R.I.B.A., Architect.

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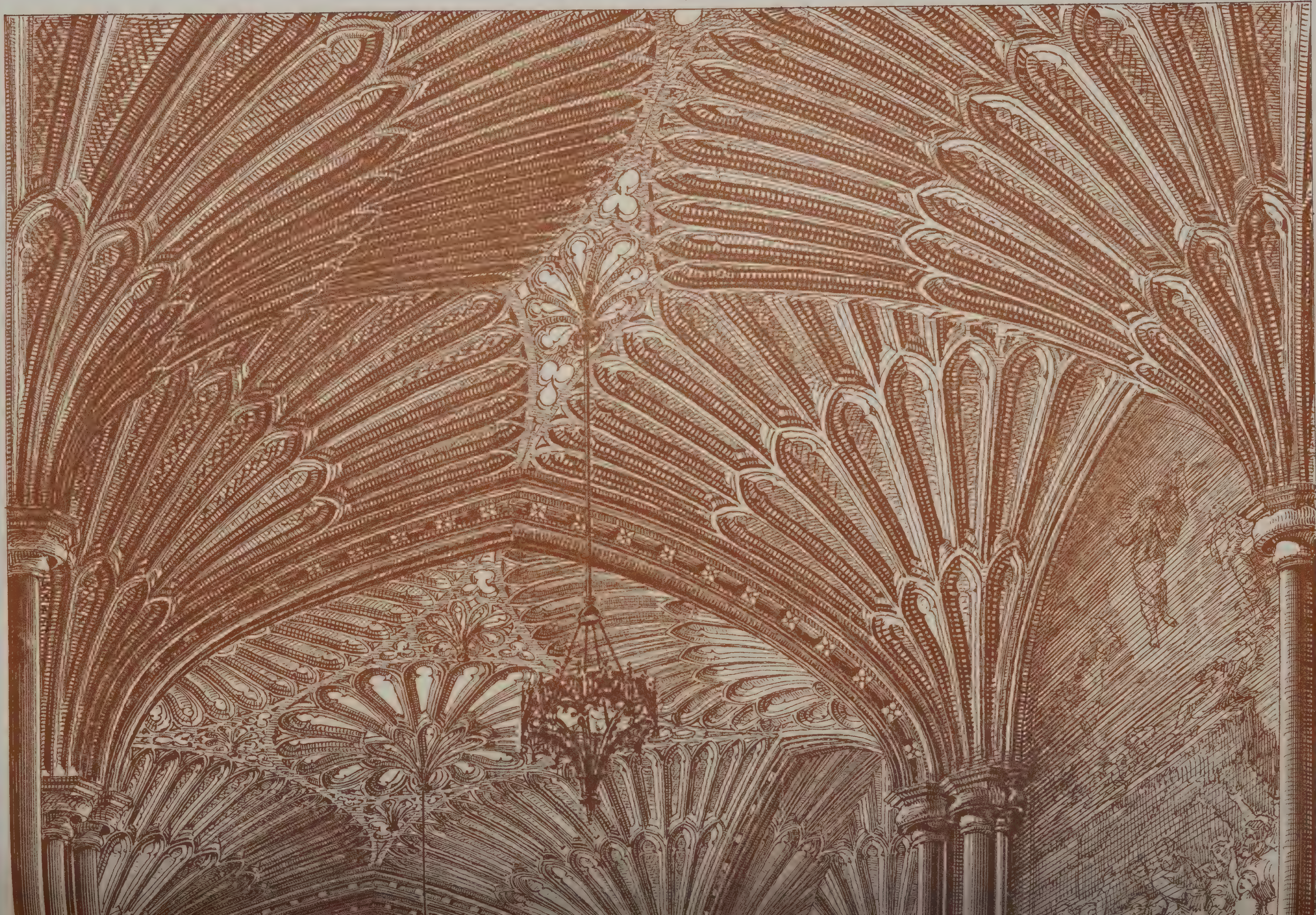

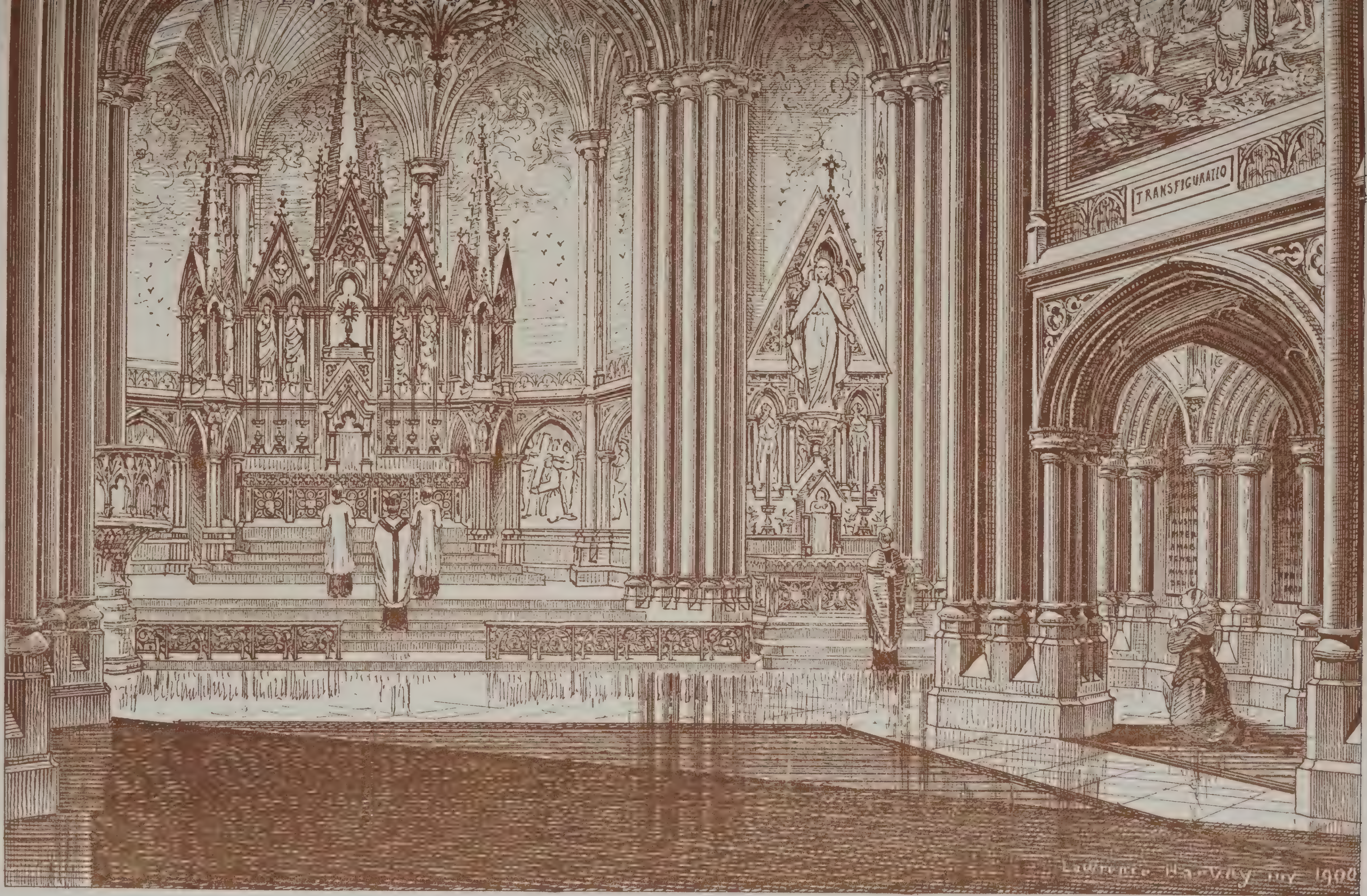

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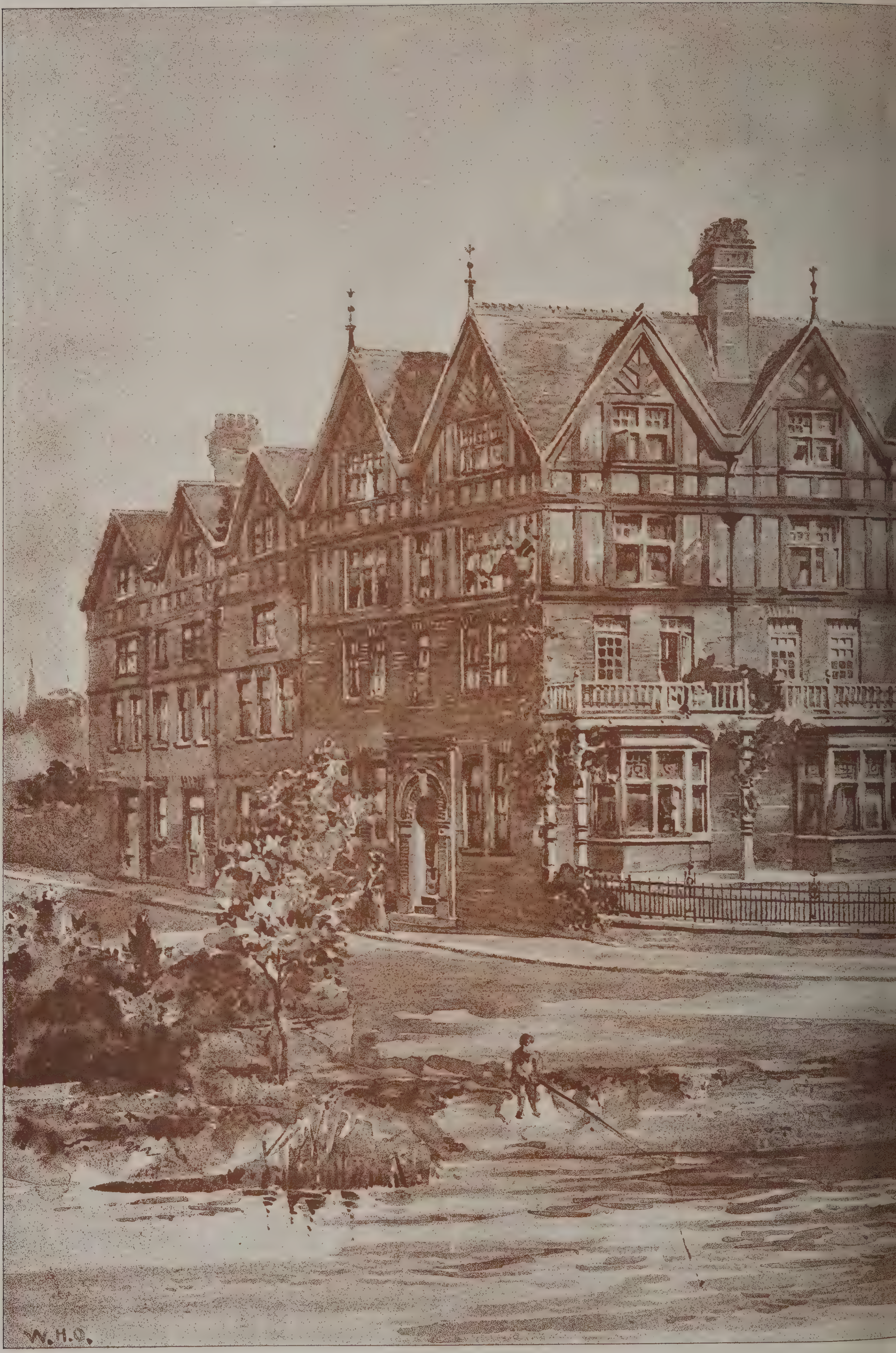

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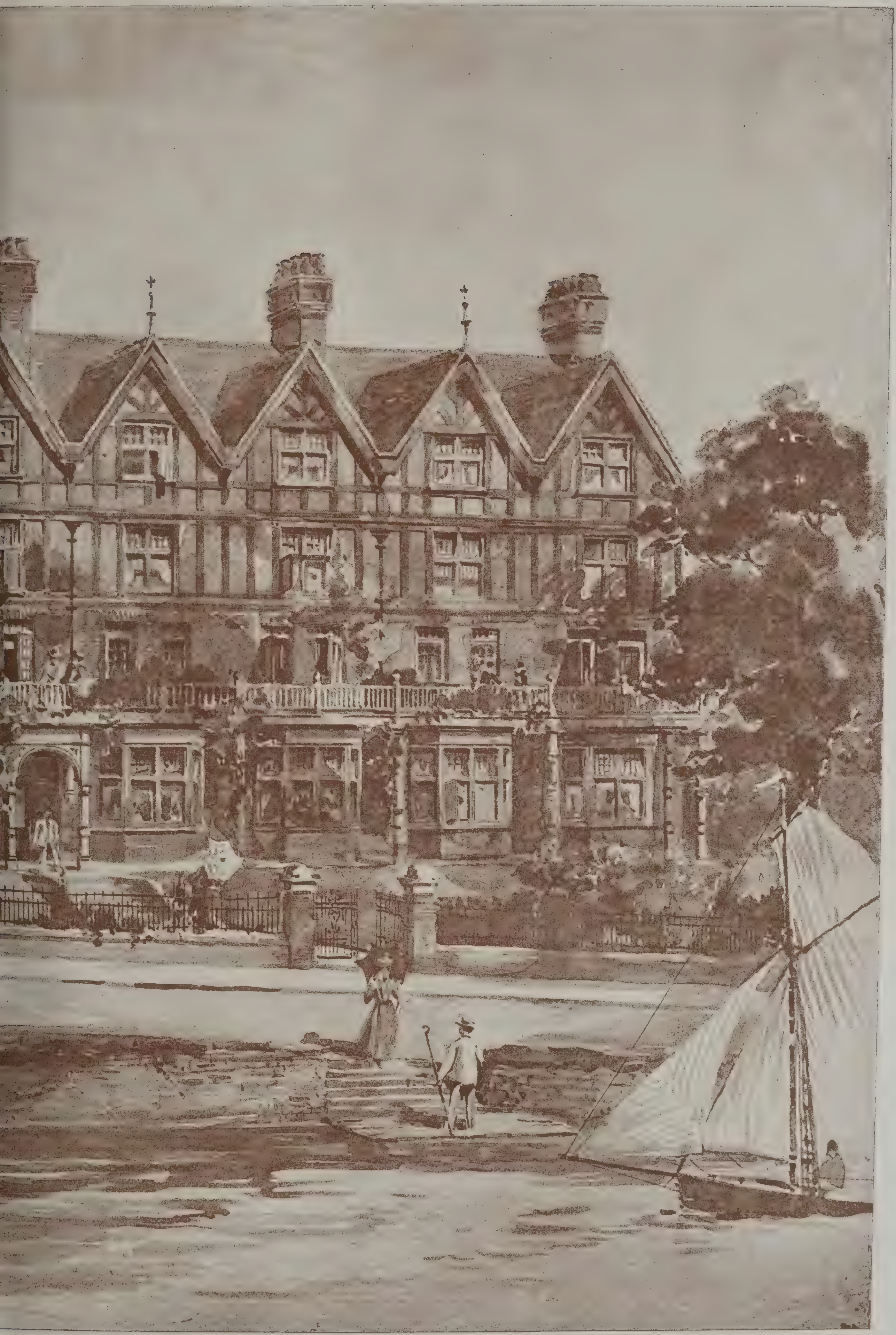

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THE WEEK.

This year the admission of ladies as members of committees of the British Association was voted, and some of the papers read by them in various sections of the Bradford meeting justified that distinction. One of the most interesting was Mrs. Armitage's on "Some Yorkshire Earthworks." The contention was that the hillocks which are generally artificial were not, as is usually supposed, erected by Anglo-Saxon or earlier inhabitants, but by the Norman invaders. The name given to them was "motte." According to Mrs. Armitage, Domesday Book refers to forty-nine castles as held by the followers of the Conqueror, the majority of which were new. Only three of those mentioned were in Yorkshire—two at York and one at Pontefract, and all had mottes. One of those at York was to watch the town north of the Ouse, and the other for the other bank. There was no authority—except that of William of Malmesbury, who wrote nearly two hundred years after the event—for the existence of any previous castle at York. The second castle is said to have been built in eight days; of course no stone structure could have been built in so short a time. The facility and cheapness with which they were built was their great recommendation. The mound at Pontefract developed into one of the most famous of Mediæval castles. Many other mounds were reared in the county; we can still count about fifty, and there may have been many more, for where a modern house occupies the site of an ancient castle the motte is generally destroyed. Some rectangular form is by far the most common in Early Norman castles with mottes. The later Norman castles which were formed out of the early ones only needed walls and stone towers to the old earthworks. A shell keep was placed on the top of the motte. But not a single keep of early Norman masonry is now to be found on a motte, a fact which supports the inference that the first Norman castles in England were nearly all of wood. If their Norman origin be accepted, it will help to furnish an answer to the great historical puzzle of how a handful of Norman adventurers were able to hold down a strong race like the English. It was organisation that did it, and these earthen castles were the local pivots which carried the action of the central machinery into the remotest parts of the kingdom, and thus established, all over England, a feudalism very different to that of the Continent, because the authority of the supreme suzerain over all these fortified posts was not a fiction, but a fact.

The combination of examination and registration does not appear to suit the Canadian architects. In Ontario it may be considered as abandoned, for the local Association of Architects has been compelled to issue the following notice:—"Architects who have not registered, nor passed the examinations prescribed by the Association, but who otherwise satisfy the requirements of the Ontario Architects' Act, and who apply before December 31, 1900, may be admitted without passing the examinations prescribed for students, if the Council after taking such steps as may be necessary to satisfy themselves of the qualifications of applicants are agreed as to their fitness." The reason given is the desire to uphold the activity and utility of the Association, or, in other words, it is in danger of collapsing by the operation of the Act which it helped to pass. If the setting aside of the provisions is necessary this year, we suppose a similar crisis can again arise next year or the year following, when a like course will be adopted. A law which is so elastic as the "Ontario Architects' Act" is not likely to be of much advantage to the art of architecture.

The relations between psychology and the practice of art are obscure. Æsthetics no doubt is now recognised as an important part of the science, for it is generally agreed there is a tendency in the mind towards the beautiful, although it may not be easy to discover whether it is innate or acquired. Professor Hartog, of Queen's College, Cork, must, however, have surprised the attendants of the Anthropological Section of the Bradford meeting when he informed them that his paper on "Interpolation of Memory" was suggested by the South Kensington art syllabus, which appeared to have been founded on ignorance of some points in pyschology. If the Professor were acquainted with the history and practice of the late Science and Art Department, he would have known that ignorance is not confined to those who drew the syllabus. His theory was that facts were not arranged in the memory according to the order of reception, but in categories or classes where similar facts were already registered. In other words, there was an unconscious process of assimilation always in progress. There had to be intervals between the facts, which were filled in according to the individual's idiosyncrasy. According to Professor Hartog, the late Lord Leighton possessed magnificent feeling for harmony of colour and form, yet no amount of instruction that the most elaborately trained heads of the Science and Art Department could have devised would ever have taught him to paint with the magnificent precision of expression and colour that distinguished Sargent's work. In other words, individuality will assert itself, and no education can go against nature. That is an ancient experience, but there is gain in having it again brought forward under scientific auspices.

It was anticipated in the early part of the year that on the occasion of the annual pilgrimage of the Positivists to the many-storeyed but humble house No. 10 Rue Monsieur-le-Prince, in Paris, where Auguste Comte died on September 5, 1857, the inauguration of his memorial in the neighbouring Place de la Sorbonne would take place. But sculptors have been busy this year, and all M. Ingalbert could prepare was the model. As in so many works of the same class produced of late years, a bust will be substituted for the statue which at one time was indispensable. On one side of the pedestal will be a figure of a woman standing holding an infant who bears a palm, and they will typify the Humanity which is the centre of the Positivist system. On the other side will be a seated figure of Science holding a book on which the titles of Comte's works are inscribed. Painters and sculptors have some reason to be grateful to Comte, for in the Positive Calendar some of their Greek and Renaissance representatives are introduced, including Scopas, Zeuxis, Ictinus, Praxiteles, Lysippus, Apelles, Phidias, Leonardo da Vinci, Michel Angelo, Holbein, Poussin, Velasquez, Teniers, Raphael, Benvenuto Cellini. But we suppose it was owing to the discomforts of his humble appartement that not one of the architects who created habitations for men (with the doubtful exception of Ictinus) was considered worthy of a niche in the Positivist Panthéon, where he would have a chance of public commemoration. That fact is enough to indicate the insufficiency of the system to represent life on earth.

The modern amateur, both in Western Europe and the United States, is generally most anxious to obtain French, English, Dutch, and occasionally German examples by living artists. Large sums are every year expended in that way. Although the greater part of the outlay may find its way in one direction that is comparatively restricted, yet a larger sum than may be imagined is expended among Roman artists and dealers. In 1899 the amount was 113,115*l.*, which was thus distributed:—Paintings, 73,969*l.*; statuary, 34,177*l.*; miscellaneous, 4,969*l.* In the preceding year the outlay was 116,930*l.* The cause of the decrease has been attributed to the increased disinclination of the Government Commissioners to grant the exportation license, especially when old works of art are submitted to them. The idea seems to prevail in official circles that too many good artistic works have been already sent abroad from Rome, and that it is time to enforce existing regulations.

THE ARTISTIC IDEA *v.* THE SCIENTIFIC IDEA.

When the Joe Toddyhigh of Dickens's story turned up in London after wandering through the world, he found the destitute companion of his childhood had been elevated to the dignity of Lord Mayor. He was not welcomed by the great man who, out of ostentation, presented his visitor with a ticket to the Guildhall banquet. Joe's feelings were varied. At one time he rejoiced at the sight of the sovereignty of his old chum, at another he upbraided himself for his weakness, and was quite ready to see an enemy in a guest near him who boasted of being a fellow member with his lordship of the Worshipful Company of Patten Makers.

We imagine a great many followers of the arts must during the past week have had experience of emotions which bore some resemblance to those which agitated Toddyhigh's mind. Once upon a time art, like Joe, stood higher than science, and was supposed to have a grander future before it. But whenever there is a meeting of the British Association we learn how widely separated they have become, for art, with which literature may be conjoined, then ceases to possess the interest which belongs to a fossil of one of the later formations, or the starch formed from glycollic aldehyde by green plants. At the Bradford meeting, which has just ended, art seemed to be peculiarly insignificant. The men of science were able to play with such colossal facts and inferences, they hardly seemed to belong to the same species as those who spend days over the contour of a moulding, or occupy months with a miniature panel, or grow wearied with efforts to bring a statuette nearer to perfection.

Take, for example, the address of Professor Sollas to the Geological Section. He has such eons to sport, with he can afford to be liberal in dealing with time. Referring to another geologist's calculations which differed from his own, he could say, "I should be inclined myself to take off some 10,000,000 or 30,000,000 years." To a man in his position the difference of 20,000,000 years was a trifle. When one can take so wide a glance through ages which are countless, the ordinary three score and ten years with their toils and troubles must appear imperceptible, and a lease for 999 years an absurdity. With so sublime a reckoning, the Professor cannot, like weak mortals, grumble when his dinner is delayed or an assistant fails to be punctual. But after adding and deducting millions of years as if trifling with counters, he comes to the conclusion that arithmetic is inadequate to express geological time, for, as he parenthetically remarked, "not twenty-five, not a hundred million of years, scarce any period short of eternity is sufficient to account for the evolution of the living world." In another part of his address he suggests what the world can show for, if we may use the phrase, so large an expenditure of time. Two millions of years would be needed for the conversion of fish into amphibians, and a similar period for the evolution of trilobites from annelids, or of annelids from trochospheres. The step from gastrulas to trochospheres might be accomplished in another two millions, and two millions more would take us from gastrulas through morulas to protozoa. Anyone who is subject to insomnia will find the working out of geological problems on a scale so generous to have a most soothing effect on the brain.

We have not the temerity to contest chronological conclusions which cannot be fully grasped, for how few people can realise what one million signifies, although the word is familiar, especially when describing outlay on war and other expenses of a constitutional Government. But when we see nature takes so long to carry out improvements—for, according to Professor Sollas and other geologists, "the little tongue-shell *Lingula* has endured with next to no perceptible change from the Cambrian down to the present day," or, say, fifty millions of years—artists are not to be blamed if they have not surpassed the Greeks who lived so recently as 2,400 years ago, nor are writers to be condemned because the recitations of Homer are still a school-book. Whether nature has any more regard for time than for many of our highly-esteemed virtues cannot well be proved, but the old lady is never in a hurry in producing substantial works, and on that account she will not, we hope, in a sudden freak display her destructive power on a globe which reveals her assiduous if deliberate industry.

Students of science who scrutinise space need not envy those who, like geologists, can find compensation for the narrowness of their fields of operation in sublime vistas of unnumbered years. The modern mind appears to revel in the infinite. When Sir George Airy in 1831 wrote a report for the British Association on "The Progress of Astronomy during the Present Century" there was no physical astronomy known to professors. In his benighted period there were only thirty-six stars under constant observation. Last year observations were taken of 5,000 at Greenwich. America, which in the middle of the century was content with a single observatory, now possesses about 150, and some of them are superior to those which are found in Europe.

Space and time are not modern discoveries, but those who thought over the subjects long ago could make little progress in their elucidation because they were governed by the artistic instead of the scientific idea. It was the purpose of the address of Sir Alexander Binnie in the Section of Mechanical Science to show how modern engineers are not the heirs of the ages, although their conclusions are in keeping with those of the astronomers and geologists. The profession he represents is, according to him, no older than the dawning of which the first revelations were the Invention of Printing, the Reformation and the Discovery of America. Success in engineering, according to Sir Alexander Binnie, depends on the estimate formed of nature as a whole, and the sources of power which it places at our disposal. The Greeks could have no more than an inadequate notion of nature because they occupied themselves with its poetic or artistic aspects. The President of Section G told his auditors that "the Greek mind from its earliest periods became saturated with the beautiful conceptions of her poets, and following from this, when philosophy first approached the subject, theories were broached and conclusions were adopted, many of which were on an utterly erroneous basis. Steeped as the Greek mind was in its lovely ideals of nature, it is not surprising to find that, when their philosophers began to formulate their theories, these deductions took the place of fact; and celestial observations, when they made them, as they undoubtedly did, were used, not for the purpose of illustrating the laws of nature as we interpret them, but as a means, partly religious and partly philosophical, in support of their preconceived ideas of the universe, the foundations of which, having been laid in poetry, became crystallised in the wonderful conceptions of the great men who directed their country's mind."

To many of the readers of Sir Alexander's address what he says about the old Greeks' ignorance of science as it is understood in the year 1900 must recall the sonnet of Wordsworth, which was written apropos of similar efforts to measure the past by a scale which is applicable only to the present and may be useless in the future:—

> The world is too much with us: late and soon,
> Getting and spending, we lay waste our powers:
> Little we see in nature that is ours;
> We have given our hearts away, a sordid boon!
> This sea that bares her bosom to the moon;
> The winds that will be howling at all hours,
> And are upgathered now like sleeping flowers;
> For this, for everything we are out of tune;
> It moves us not. Great God! I'd rather be
> A Pagan suckled in a creed outworn;
> So might I, standing on this pleasant lea,
> Have glimpses that would make me less forlorn;
> Have sight of Proteus rising from the sea
> Or hear old Triton blow his wreathed horn.

Wordsworth was very far from being a neo-Pagan, but he thought (poor man) life was not intended to be given up to gaining wealth, which is the main object for the advancement of science. It was incorrect, according to meteorology, to compare winds with sleeping flowers, and in a physiological sense the sea is without a bosom; but allowances should be made for those who have not scientific aptitudes and yet are compelled to exist. If the test of engineering construction be applied, the Greeks and Romans who believed in Proteus and Triton, and whose works still endure, should not be considered as altogether helpless beings. To speak of the times when the two peoples lived and worked as marked by a "palsy of the mind" is to take too narrow a view of simple facts. We have gained some advantages by scientific progress, but we have lost many others. It is possible one of the Greek architects who worked for a Roman concessionnaire would be incompetent to produce a combination of materials of the same form and dimensions we are to behold in the Vauxhall Bridge; but the lovely ideals of nature in which his mind was steeped would have enabled him to impart qualities to the materials by which they would become expressive of something more than the scientific idea of nature. There are many phenomena in the world around us which are true, although they do not lend themselves to experiments with a testing machine. The ancients were familiar with them, and they derived more gratification from them than is possible for moderns with all our science.

Originally the British Association restricted itself to the increase of the knowledge of phenomena, and that object is still pursued. When the Anthropological Section was added it may have been intended to consider the arms and tools of primitive man, without regard for the men who used them. But the interesting address delivered at Bradford a week ago by Professor John Rhys shows the impossibility of restricting attention to handiwork when the maker or worker can be utilised as a subject. What the Professor said was enough to justify the assertion that anthropology rests on romance, for his address was devoted to the fairies. But, as became a President of a section of the British Association, he endeavoured to demonstrate that the race to which belonged Titania and Oberon, with Puck (who anticipated telegraphy by offering to put a girdle round the globe in forty minutes), were in reality a people who were short, stumpy and swarthy, and either lived underground or in concealed habitations. The Picts, or Pechts, of Scotland were one variety of examples. Some of their houses appeared like hillocks covered with grass; the entrance was low and inconspicuous, and the cells or compartments very small. Professor Rhys concludes that these mound dwellers corresponded with the Lapps of Northern Europe, and indulged in magic and wizardry. They were conquered by a different race who invaded the islands, and among whom tattooing of the body was common, who in turn had to succumb to Celts and other immigrants. Professor Rhys is proud of his conclusions, by which he has endeavoured "to substitute for the rabble of divinities and demons, of fairies and phantoms that disport themselves at large in Celtic legend, a possible series of peoples, to each of whom should be ascribed its own proper attributes." Truth is great and must prevail, but who is there outside the British Association who would not prefer Queen Mab, although she is or was "no bigger than an agate-stone on the forefinger of an alderman," to a horde of pigmies? A coarse imagination may desire to have a rabble of divinities, fairies and phantoms, but when working under favourable conditions it will create things in which the shortcomings of created beings and objects are set aside. As Coleridge said :—

> Fable is love's world, his house, his birthplace,
> Delightedly dwells he 'mong fays and talismans
> And spirits; and delightedly believes
> Divinities, being himself divine.

The case of the pigmies is not an inapt illustration of much that is done under the name of science. There is a great array of counting, measuring, analysing and other process-work gone through in order to increase the multiplicity of facts, but they are not of much avail, unless to those who take part in the operations, until power is exercised which is not unlike that which transformed brutal Picts or Pechts into tiny but omnipotent spirits who can control the material world and produce when they fall out a "progeny of evils." In the Elizabethan age men were not less manly because their thoughts sometimes found enjoyment in such fairy scenes as those recorded in "A Midsummer Night's Dream."

We have no wish to undervalue modern inventions or deductions from facts, but they are not proportionate to the mass of data which can be found in the transactions of the societies. Those inventions which have revolutionised the world, moreover, came from men who were not masters of the statistics of science, but who possessed the power which enabled them to turn scanty resources to good account. Unlike Sir Alexander Binnie, they did not attempt to form an idea of nature "as a whole"—for that task they may have thought no one human mind was capable—but they concentrated attention on what to others was of little account and they brought imagination to their aid. Watt would have made no figure in a discussion about crustacea, but if he had devoted himself to counting the variations in their metamorphoses he might not have been able to derive a hint for constructing a water pipe under the Clyde from the plates of a lobster. It was said of him that he possessed "infinite quickness of apprehension, a prodigious memory and a certain rectifying and methodising power of understanding, which extracted something precious out of all that was presented to it." That is the sort of understanding which is now to be desiderated in our men of science. They seem to be so intent on making out estimates of nature as a whole and collecting data for that purpose, as to be incapable of extracting the precious products which convert the inquiries of individuals into public benefits.

It is no consolation to be able to say we are better than the ancient Greeks, since we possess British Associations and scientific societies, and they abandoned themselves to the delusions of priests, philosophers and poets. If progress is the law of the world, we must not expect perfection at an early age or in any age; there has always to be room for improvement. Whatever were the limits of Greek science (and they are not to be defined from the occasional references in treatises relating to a different class of subjects), there was not much inconvenience caused by them, and compensation was found in the power displayed in literature, and especially in art, where no trace of lack of observation or erroneous conclusions from phenomena are to be observed.

In dealing with such problems as the effects of science in modern times, we are all too disposed to disregard whatever is not impressive from its vastness. Sir William Turner, the president of the Bradford meeting, pointed out how, by applying science, "Man has, to a large extent, overcome time and space; he has studded the ocean with steamships, girdled the earth with the electric wire, tunnelled the lofty Alps, spanned the Forth with a bridge of steel, invented machines and founded industries of all kinds for the promotion of his material welfare, elaborated systems of government fitted for the management of great communities, formulated economic principles, attained an insight into the laws of health, the causes of infective diseases, and the means of controlling and preventing them." All these great works exemplify the advantage of co-operation. But the Greeks, and particularly those of Athens, cared little for whatever was not the product of the power of an individual. The President wisely avoided all reference to the work of artists, for excellent as is the co-operative principle, it fails when it tries to design a beautiful building, to paint a fine picture or to compose a book that will endure. For work of that class individuality is essential; it is creation, not observation alone, that is then required to be exercised. The artistic idea has its part to play, and let philosophers say what they will, all science that is really fruitful, and not nominally so, must be subjected to a like law.

AN ANCIENT GREEK AS A GOTH.

It is often difficult to command inspiration, for happy thoughts will not come always when they are summoned. In schools and colleges teachers used sometimes to suggest to their students to get over the difficulty by asking themselves, "How would Homer or Virgil write in this case?" It was an absurd notion, for it was necessary that the tyro should be able to enter into the mental laboratory of the poets and imitate their operations. That was a privilege which was not allowed to all the world. Reynolds was as amusing as any of those literary teachers when he advised the Academy students of 1769 to become possessed of the spirit of the great masters, and he went on, "Consider with yourselves how a Michel Angelo or a Raphael would have treated this subject, and work yourself into a belief that your picture is to be seen and criticised by them when complete; even an attempt of this kind will rouse your powers."

Competitors for architectural work who endeavour to flatter an assessor by imitating his buildings, can testify that the effort to gain possession of another man's designing power is not easy nor conducive always to satisfactory results. For caricaturists such an experiment in metempsychosis may have its use, but in no other case. Defects are more likely to be imitated than better qualities when one aspires to become identified with an artist or writer. It is, however, allowable, and may be useful to put oneself in the place of another person in order to judge of effect, for that is only securing a point of view from which a work may present an unexpected or novel appearance. That no doubt was the intention of George Edmund Street when in a paper he wrote some half a century back he ventured on the speculation of what "a genuine old Greek architect" would do if he were invited "to design a temple in his own style as far as he could, making use at the same time of the Pointed arch."

Mr. Street was not a bigot and inimical to Greek work. He had heard Cockerell's lectures when he was a student, and he realised the beauty of Greek architecture. In that way he resembled all the modern followers of Gothic whose judgment is entitled to respect. It was only reasonable to suppose the Greeks would be at least as generous in dealing with Mediæval work. They were hampered by the conditions imposed on them in order to preserve forms which for many reasons had become endeared to the people. It would be interesting to discover what they would aim at if they possessed the means for new combinations which modern architects derived from their Mediæval predecessors. As the Pointed arch was the essential element of the style to be treated, the first question was, How would the genuine old Greek support it? The answer given was as follows :—

> His old Greek column spread as it went down to the ground because all that it had to do was to bear its burden firmly and decidedly ; it had nothing to do with any continuous idea. But directly a column supports an arch it has this idea. Its capital gathers together the mouldings of the arch. In their passage through it they may take a different form, but still not so different but that they may be traced (in all fine architecture this must be a rule), and then of necessity each of these members goes on to the base, and so to the ground. It is the active principle of continuity which denies to them the spread which, in the passive column of old Greece, is a necessity. And another point follows from this, viz. that the continuous shaft will be as distinctly a piece of built masonry as the other is distinctly monolithic in its nature. The monolithic column must of course be finest when, as in the temples of Ipsamboul and Elephanta, hewn out of the living rock ; but then this is distinctly a savage idea, whereas a column, built up and constructive in its whole character, is decidedly an evidence of man's ingenuity and science. The Greek column was, therefore, from the day of the invention of the arch, a thing of the past, and no longer applicable in any building pretending to avail itself of the best principles in construction. And this a Greek architect would soon have felt had he reasoned legitimately, and his ancient model would have lost its own element and assumed instead the peculiar features of the Pointed shaft. His arches would have required more abutment than his own style gave, and this given, either with buttresses or piers, his design would have been complete.

The Greek architect could not have had any experience in the construction of high-pitched roofs, which by some theorists are supposed to be no less characteristic of Gothic than the Pointed arch. Mr. Street would make that part of the task easy for the stranger. The roof could be flat if desired by him. Mr. Street maintained that "the steep-pitched roof is not an element of the Pointed style ; on the contrary, steep and flat roofs are accidents depending entirely and solely on variations of climate, and it would be at least as absurd to build a steep roof in a tropical climate merely for the sake of effect as it would be to build a flat one in a northern climate."

A Greek architect could not feel he was given full liberty if he were prevented from employing a cornice, not merely as an ornamental feature, but as a means of expressing an attribute which all good buildings should possess. Mr. Street was prepared to accept the cornice. He believed in the effect of horizontal lines for producing the repose which is desirable in all architecture, and which was exemplified in the most satisfactory Mediæval buildings, if neglected in those which are modern. He knew that many critics would condemn him, for they believed Pointed architecture was the greatest enemy of the principle of horizontality. Mr. Street offered the following defence:—

> When men talk as they do about the vertical principle of Pointed architecture, what do they mean, and is their meaning susceptible of legitimate and clear explanation? It is all very well to feel the upward tendency of spires, of pinnacles, of buttresses and of arches, but is it fair to forget that long lines of roofs and of parapets and of string-courses and of plinths were as decidedly horizontal as aught could be, and that many of these were, in innumerable cases, worked out with such care and such magnificence as showed that their builders felt well their importance in the composition? And is it well to forget that all construction is necessarily horizontal, and that if you ornament construction by colour or by carving throughout the whole surface of a building, your ornament must necessarily be in horizontal and not in vertical lines? Now the Italian architects felt this, and they used accordingly with consummate skill courses of variously coloured stone or marble, laid in natural horizontal courses throughout their buildings, and certainly most lovely in their effect. . . . This system has, therefore, ancient precedent in its favour, occasionally even in England—almost universally in the South. It is, so far as we can judge, just that element which is required to harmonise and perfect the most elaborate Pointed work, and for the lack of which most modern work, and much old, fails in inspiring that placid and quiet feeling which all great art should inspire.

Greek temples, and, as far as can be discovered, other buildings, were not lofty. It might be supposed that the churches of England, which are rarely remarkable for height, would find favour with a resurrectionised architect of an antique time. Mr. Street, however, was most emphatic in urging the necessity of height in new churches, because "height in excess seems to typify the excess of their adoration who so built; whilst the greater length makes one think of possible calculations as to how many thousand men and women might pass through, or how long a procession might wind along before it was lost in the distance."

Height suggests lighting, and we cannot suppose a Greek could help in treating that problem. Mr. Street, however, embraced the opportunity to explain some of his own views ; in fact, there cannot be much difference between what is expressed vicariously and what is said in the first person. In the first place, Mr. Street confesses that he was as guilty as others of the error which was derived from the belief that a dim religious light was indispensable in churches. He came, however, to the conclusion that it prevented the full development of architectural effect. As he put the question, "When all is shade what becomes of those lovely alternations of light and shade in which we all rejoice so much, when nature gives them to us in brilliant sunshine, glancing through the dense foliage of a woody path, and without which, as no external scenery is ever perfectly lovely, so can no internal effect be perfect either?" To introduce an immense flood of light he considered was destructive of good effects, and the best plan was to concentrate light on particular points so as to produce as much as possible alternations of light and shade. The effects could frequently be gained by leaving a considerable space of wall unpierced, whilst beyond we admit more light than we otherwise should; or, in a long arcade of aisle or cloister, the stopping of one or two windows will produce the same effect. As an example, Mr. Street referred to the aisle of the choir at Lichfield, "where two bays have no windows, owing to the entrance to the chapter-house interfering with them, and the effect of the dark shadow dashed across the brilliant light which streams in on either side is singularly beautiful." Where there is great height, effect could also be obtained "by the admission of almost all the light at a level high above that of the pavement." But he considered no effect would be so admirable as that arising from the admission of light in vast quantity at the east end, especially when arranged as an apse. He then referred to his own experience abroad :—"No one who has stood, as I have, at the west end of such a cathedral as that of Chartres, and watched the last rays die out from all other windows, and at last gradually fade away from the western crown of light on its five windows, or who has seen the morning sun come through all these openings, one after the other, with matchless and continued brilliancy, would deny that such glorious beauties are catholic of necessity, and not to be confined by custom or etiquette to one age or one nation."

Window openings suggest glazing, and in a Mediæval building coloured glazing. It would be of interest to know what an ancient Greek would think of the vitrified pictures which in foreign churches have captivated generations during six or seven centuries. Mr. Street considered that the office of a window is to be transparent, for otherwise a plain wall would be preferable. The glass should, therefore, make no pretence of being pictorial, for shading was to be avoided; the figures should not be in perspective, the colours should be permanent, and regulated by the amount of light to be introduced. Grandiose effects were to be avoided, for the design "must never venture, for instance, to throw itself in one subject over more than one light, as though disregarding the monials; nor ever put subjects under canopies (or, as often is done, one subject under some three, four, or five or six distinct canopies), nor mix up drawings of large and small figures together in the same window; nor, in a succession of similar windows, devise a succession of dissimilar subjects or plans of filling in."

In other forms of decoration the Greek would be more at his ease, such as "all surface ornamentation of mouldings or walls, the execution of which does not require more than manual dexterity on the part of the workman, and the whole merit of which, therefore, does in fact belong to the architect himself." In Romanesque and transitional work ornament is to be found which would not be alien to the Pointed style, and which was probably not independent of Greek influences. In England Pointed work has scarcely any ornament but the dog-tooth, ball-flower and diapers. The first two are said to be "generally unsatisfactory, as diminishing rather than adding to the effect of mouldings among which they occur; their sharp, sudden shadows, and the speckled effect for which they are generally so conspicuous, being in a composition far less truly effective than the flatter and more carefully defined and drawn ornaments of Classic and earlier Christian art."

Mr. Street's paper is an architectural eirenikon. Classic and Gothic need not be treated as styles which must always be inimical. Much can be reconciled, and the gap between them in that way made narrower. Prejudice is, however, too strong to allow of more that a partial reconciliation, for as long as it is believed that architectural truth has been fixed for eternity and is to be found in one style alone, such a consummation as Mr. Street wished for is never likely to be accomplished.

PRINCIPLES OF CONSTRUCTION FOR ARCHITECTURAL STUDENTS.

By the late E. Wyndham Tarn, M.A.

(*Continued from last week.*)

XI. *Trussed Roofs.*

Trussed-roof is one that produces no horizontal thrust upon the supports, the feet of the principal rafters being framed into the ends of a tie-beam, B C (fig. 7), and securely fastened by iron bolts or straps; the tie-beam will thus take the whole thrust of the roof as before explained, and will therefore be subjected to a tensile stress, so that an iron rod will answer the purpose as well as a beam of wood. The tie-beam is, however, liable to be bent downwards by its own weight (and sometimes by that of a ceiling), and this deflexion should not exceed 1-40th of an inch for every foot of its length. If the length is 18 feet, then the least scantling (as a tie) must be 4 inches by 4 inches, but if it has to carry the load of a ceiling its scantling should be 9½ inches by 5 inches.

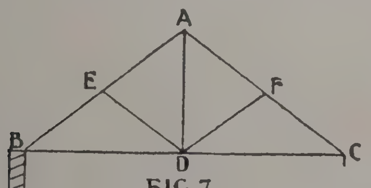


FIG 7

We can, however, reduce the size of the tie-beam by supporting it in the middle with an iron rod, A D, passing through the heads of the rafters and bolted through the tie-beam. This rod is called a king-bolt, and may be replaced by a piece of timber, or king-post, into the head of which the heads of the rafters are framed, while an iron strap passed round the middle of the tie-beam and bolted to the lower end of the post, enables it to hold up the tie-beam and prevent it from sagging under the load it supports.

Also, in order to prevent the rafters from bending in the middle the struts, D E and D F, are introduced between the middle of the rafters and the foot of the king-post. The whole piece of framework when thus completed is called a "king-post truss," and is that which is commonly used for roofs whose span does not exceed 30 feet. The tensile stress borne by the king-post in holding up the tie-beam produces a thrust down the rafters, which causes an additional thrust along the tie-beam, and the pressure of the struts on the foot of the king-post increases the tension therein.

The stress in each of the several pieces of the truss can be found by means of a stress diagram (fig. 8), the lines of which are respectively parallel to the directions of the impressed forces. This method gives us the stress to which each piece is subjected when the load, W, on one side, and the load, w, on the tie-beam is known. It is here supposed that $\frac{1}{4}$ W is supported at A and at B, and $\frac{1}{2}$ W at E for one side.

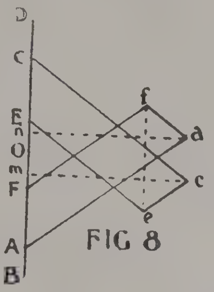


FIG 8

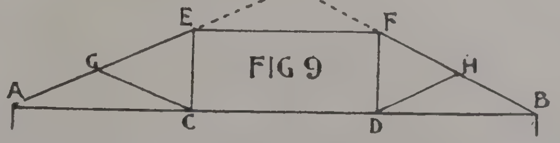
Let the vertical line, B D (fig. 8), represent on scale the load 2 W on the two rafters, O its middle point; measure A B, C D, O E and O F each to represent $\frac{1}{4}$ W; A F and C E will each represent $\frac{1}{2}$ W. Draw A a parallel to the rafter A B (fig. 7), and C c parallel to the rafter A C; let O n and O m each represent $\frac{1}{4}$ w; draw horizontal lines, $n\,a$, $m\,c$, meeting A a and C c in a and c. Draw F f and E e parallel to the rafters, $a\,f$ parallel to the strut D E, $c\,e$ parallel to the strut D F, and join $e\,f$. Then A a represents, on the above scale, the thrust down the rafter E B, F f that down the rafter A E; $a\,f$ is the thrust down the strut E D, $n\,a$ represents the tension in the tie-beam and $e\,f$ that in the king-post. In this diagram the dotted lines represent tensions and the strong lines compressions.

For example, if the span is 18 feet and the pitch 27 degs., the load W being 60 cwts. and the load w being 20 cwts., then we find the tensile stress in the king-post to be 35 cwts., that in the tie-beam being 85 cwts.; the compression down the lower half of the rafter is 93½ cwts. and that down each strut is 27½ cwts. From these data we find that the scantlings of the timbers should be as follows:—

Tie-beams 5 inches by 4½ inches, rafters 5 inches by 4 inches, struts 3 inches by 2¼ inches, king-post 4 inches by 2¼ inches.

In a similar roof of double the span the scantlings should be:—Tie-beam 9 inches by 5 inches, rafters 8 inches by 5 inches, struts 5 inches by 3 inches, king-post 5 inches by 4 inches.

Queen-post roof is used when the span exceeds 30 feet, the tie-beam being upheld in two places by queen-posts, C E, D F (fig. 9), which are themselves held up by the rafters A E, B F, which are framed into their heads, and also a horizontal straining-piece E F, which is in like manner framed into the heads of the queen-posts. The rafters are stiffened by means



of struts, C G, D H, resting on the feet of the queen-posts. For a queen-post roof of 27 degs. pitch and 36 feet span, the scantling of the timbers should be as follows:—Rafters and straining-beam 8 inches by 5 inches, queens 5 inches by 2½ inches, struts 4¼ inches by 2½ inches, tie-beam 9 inches by 5 inches. For a roof of 46 feet span they should be:—Tie-beam 11 inches by 5½ inches, rafters and straining-beam 9 inches by 5½ inches, queens 5½ by 3½ inches, struts 4¾ inches by 3 inches.

In roofs of larger span a combination of the king and queen-post roofs is generally adopted where timber is used, but it is better to use wrought-iron for kings and queens than to make them of timber. The heads and shoes into which the heads of the rafters and feet of the struts are fitted may be of cast-iron, through which the king or queen-bolt passes.

(*To be continued.*)

THE HORIZONTAL LINES OF THE PARTHENON AND THE SEA HORIZON.*

It is a well-known fact that the principal horizon lines of the Parthenon are not straight, but have an upward convexity amounting to several inches. This strange departure from the ordinary method of building must have added considerably to the difficulty of construction, and would hardly have been chosen by the architects of this great masterpiece of the building art without some good reason. Attempts have been made to show that the curvature of the stereobate was necessary to insure good drainage; but such explanations are unsatisfactory, for it is evident that an equally good system of drainage could have been devised without the necessity of using curved lines. To a large number of those who have studied the matter, it has seemed probable that these curves were employed for the purpose of satisfying some highly refined, artistic sense possessed by the ancient Greeks, which modern architects either do not recognise or think it not worth while to consult.

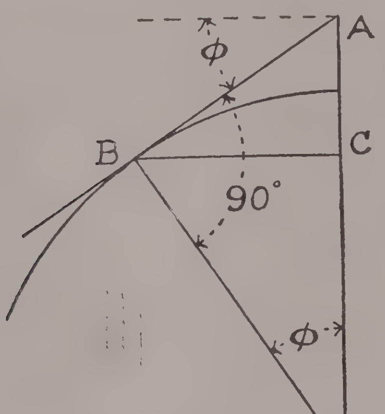


Fig. 1

The reason for the upward convexity of the entablature lines under the pediments is doubtless to be found in the desirability of counteracting the optical illusion caused by the slanting lines of the pediments meeting the horizontal lines at an acute angle, such a relation causing a straight horizontal line to appear curved downward. No such theory can, however, be applied to the horizontal lines of the flanks of the temple.

Early in the present century Dr. Emil Braun advanced the theory that the Greek builders endeavoured to make their horizontal lines harmonise with the curve of the sea horizon as seen from the temple; but, so far as the writer knows, Dr. Braun made no attempt to prove the truth of this theory, and the attempt of Penrose to apply Braun's theory to the flank-lines of the Parthenon gave such an unsatisfactory result that the theory seems to have been then abandoned so far as it might have been thought to apply to the lines of this temple.

In the attempt of Penrose and others to test the truth of Braun's theory, the mistake seems to have been made of comparing the Parthenon lines with an arc of the horizon limited by the natural visual angle of 60 degrees. What methods were used in making the tests referred to the writer is unable to state, but the result obtained by Penrose showed but little more than one-half as much deflection in a 60-degree arc of the horizon as in the flank-lines of the Parthenon.

The following calculations will show that Dr. Braun's theory was right, so far as it went. But, furthermore, I propose to show that not only do the flank-lines of the Parthenon harmonise with the curve of the sea horizon, as seen from the Acropolis, but that the curves are really parallel when the correct point of observation is chosen and the whole length of the sea horizon visible from that point is considered.

In order to make the method of my calculations clear, let us note, first, some of the characteristics of the sea horizon, and observe how it varies with the point of view. From a vessel far out from shore, or from a small island distant from other land, the horizon may be seen as a complete circle; but because our point of view is so near the plane of the circle, and we view the line at such an acute angle, a small section of the horizon appears nearly straight. If, however, we could by some means ascend to a considerable height, the curvature of a given arc would appear much increased, and it is possible to conceive of a height where the horizon would appear as a small circle within the limits of a single view.

The sea horizon may be defined as a circle passing through the points where the visual rays from any point of view become tangent to the surface of the sea. The radius of the horizon circle for any given point of view may be found by means of the following formula—

$$BC = AC \times \cot \phi$$

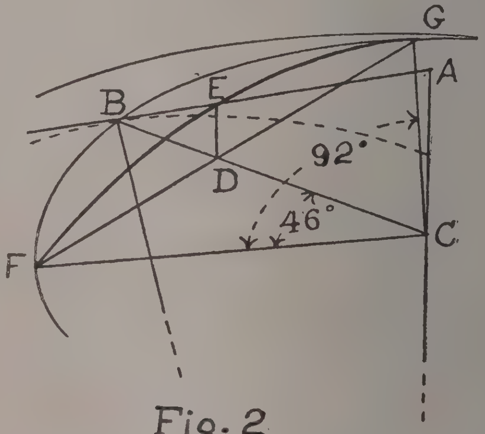


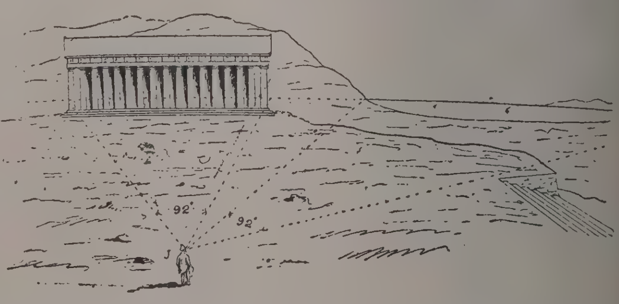
Fig. 2

where BC equals the required radius ϕ, the angle made by the visual rays with the horizontal, and AC, the vertical distance of the point of view above the plane of the horizon, which for heights less than 1,000 feet may be taken as twice the elevation of the point of view above sea level. It will be seen from fig. 1, where A represents the point of view, B a point in the horizon, and O the centre of the earth, that the angle ϕ is the same as that between the radius, BO, from the point of view.

In this and the following figures the elevations and angles have been shown much exaggerated in order to avoid confusion of lines, and show the method more clearly.

Fig. 2 may be supposed to represent a perspective view of fig. 1, with a section of the horizon line passing through B. Here is shown, at FEG, a view of the horizon line, somewhat as it would appear from the point A; the short line, ED, representing the greatest deflection of the curve from a straight line, FG, joining its extremities.

Now, to return to the natural horizon, any one who has visited the Acropolis at Athens must have been impressed by the magnificent view of the sea which appears towards the south-west. A very clear impression remains in my mind of this view as seen from the platform of the Nike temple in the spring of 1897. On a clear day the horizon may here be traced from the slope of Hymettos towards the east to the shore of Salamis on the west, broken only by the island of Ægina and one or two other small islands. To be sure, the heights of Corinth appear above the horizon towards the west, but as the shore-line is here below the horizon the curve is continuous until it strikes the shore of Salamis. The length of this arc of the horizon I have ascertained to be about 92 degrees.



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* A paper by Mr. W. F. Decker, published in the *American Architect*.

When the extreme refinement displayed by the Greek architects in the delicate entasis of their columns and in the correction of slight optical illusions is considered, it seems to me a reasonable assumption that, in the matter of horizontal lines, they should have taken as a basis this conspicuous and sharply defined natural line, which is the true horizontal line, rather than the shortest distance between two points—which is the common practice to-day.

As has already been said, the curvature of a given arc of the horizon varies with the height of the observer. In the following calculations the elevation has been assumed to be 485 feet, which is, as near as I am able to ascertain, the height above sea level of the Nike temple platform, where one has the best view of the horizon that can be obtained from any part of the Acropolis or of the city.

The mean radius of the earth being 20,898,240 feet, we may compute the length of *A B*, or of a visual ray from the given elevation, by means of the following formula :—

$$AB = \sqrt{AO^2 - BO^2},$$

$$= \sqrt{\overline{20{,}898{,}240 + 485}^2 - 20{,}898{,}240^2}$$

$$= 142{,}378 \text{ feet, then}$$

$$AC = \frac{AB^2}{AO}$$

$$= \frac{142{,}378}{20{,}898{,}240 + 485} = 970 \text{ feet, very nearly,}$$

$$\text{and } BC = \frac{BO \times AC}{AB}$$

$$= \frac{20{,}898{,}240 \times 970}{142{,}378} = 142{,}376 \text{ feet.}$$

Now, the length of the arc of the horizon under consideration being 92 deg., we have, fig. 2,

$$BD = Vers\ 46^\circ \times BC$$

$$= \cdot 30536 \times 142{,}376 = 43{,}463 \text{ feet.}$$

We have, also, by similar triangles,

$$ED = \frac{AC \times BD}{BC}$$

$$= \frac{970 \times 43{,}463}{142{,}376} = 296 \cdot 1 \text{ feet,}$$

which is the actual deflection, in feet, of the horizontal line between Hymettos and Salamis, from a straight line joining the extreme points; viewed, however, from a distance of more than eighteen miles.

Let us now suppose that the northern flank of the Parthenon is being viewed from a position where the length of the flank will be subtended by an arc of 92 deg. described about the point of view as a centre. The length of the flank being 228 feet, we have, fig. 3, the point of view, *J*, at a distance *J K*, directly in front of the middle of the flank.

It will be seen that

$$JK = tan\ 44^\circ \times KI,$$

$$= tan\ 44^\circ \times 114 = 110 \cdot 08 \text{ feet.}$$

In order to compare the deflection of the horizontal lines of the Parthenon with the deflection of the arc of the horizon that we have been considering, we need to note the relative angles of the visual rays. We have assumed such a point of view in front of the Parthenon that the horizontal visual angle is the same as that which includes the limits of the arc of the horizon under consideration. The vertical visual angle, in our view of the horizon, will then be measured by *E D* in fig. 2; but *E D* is distant 142,376 minus 43,463 = 98,913 feet. To find *X Y*, the corresponding measure for the same visual angle at a distance of 110 feet, we must apply the proportion—

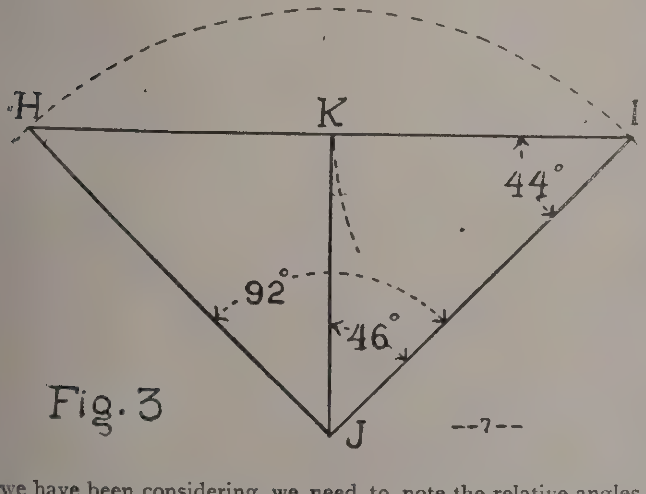

Fig. 3

$$XY : ED :: 110 : 98{,}913, \text{ or}$$

$$XY = \frac{296 \times 110}{98{,}913} = \cdot 329 \text{ of a foot,}$$

which is within two-thousandths of a foot, or considerably less than one-thirty-second of an inch, of the exact mean between the deflection of the entablature and stylobate lines on the flanks of the Parthenon, as given by Penrose. Or, in other words, the horizontal lines of the Parthenon, as viewed from a point 110 feet distant from the middle of the north flank, correspond almost exactly with the curve of the horizon as seen from the most favourable position for viewing it in Athens. Reference to a plan of the Acropolis will show that the position taken as a point of view is one of the most favourable that could be chosen for viewing the northern flank of the temple, and that no such good view of the southern flank can be obtained from the Acropolis, on account of its nearness to the precipitous slope on that side.

At the time the Parthenon was built the Propylæa, which now somewhat interferes with the view of the horizon from the point indicated at *J*, had not been erected, so that an observer stationed at that point could then see both the Parthenon and the horizon line without changing his position, and the view of the horizon thus obtained would not vary appreciably from the one on which my calculations are based. It would have been an easy matter, with straight edges and movable ordinates, for two or three men to have taken a pattern, as it were, of the sea horizon at the distance of 110 feet from one of their number stationed at *J*, and then to have transferred this pattern a little to the left, where it could have been used as a base-line for the building under construction.

The writer has been told that the pioneers of the West often levelled their houses by sighting over the horizon of the prairies, which is a far less accurate method than that available to the Greeks, with the sharply defined sea horizon in full view.

Although the curvature of the stylobate lines, as they exist to-day, may be easily measured, it is necessary to estimate, in part, the curvature of the entablature lines of the flanks, on account of the ruined state of that part of the temple. Taking this into consideration, as well as the fact that I have been unable to measure altitudes and angles with perfect accuracy, it may be considered remarkable that the result of these calculations comes so near the mean of the deflections of the lines of the Parthenon as previously measured and estimated by Penrose and other observers.

During the long period of more than 2,300 years that has elapsed since the building of the Parthenon, though nature's line has not changed, various causes have altered the lines of the building beyond any man's power to restore perfectly. It would therefore be useless in their present state to attempt to determine whether or not they belong to any class of conic sections. Penrose, however, states that the Parthenon curves approximate arcs of circles, while we know that the horizon line is a perspective view of an arc of a circle, which would vary only slightly from a true arc within the limits taken. Equal portions, therefore, of the horizon and of the Parthenon lines, such as would be included within the natural visual angle of an observer stationed at the point *J*, would appear parallel so long as the deflection from the straight line is the same in both cases for an arc of 92 degrees, which the result of the above calculations shows to be true.

I believe, therefore, that it is safe to conclude that the builders of this matchless structure, sensible of the beauty of that long, sweeping curve, laid their horizontal lines parallel to the great natural line that was always before them, regardless of extra labour, so long as perfect harmony with nature might thus be secured.

The Memorial-stone of the new public library, assembly hall and technical school for the borough of Colne was laid on the 10th inst. The building, which with its appointments is expected to cost about 10,000*l.*, is a large stone structure, having a principal frontage of 125 feet to Albert Road, the main street of the borough. The technical school constitutes the largest portion of the building, and will be two-storeyed, and in the area, in the centre of the building, will be placed a weaving shed, with weaving classrooms and engine-house adjoining. The public library has committee and librarian's rooms adjoining. The public hall will measure 84 feet by 44 feet, having galleries on three sides and a stage. The architects are Messrs. Woodhouse & Willoughby, of Manchester, whose design was placed first in an open competition. The building is being erected by the Corporation of Colne.

NOTES AND COMMENTS.

One of the reasons which may have led to the carelessness of the authorities of the Paris International Exhibition when preparing the list of awards, and which has caused some inconvenience in England, was the knowledge that the honours which were to be distributed were almost of an abstract kind. As a matter of fact, there will be no medals given to the exhibitors. We announced that arrangement long before the Exhibition opened. Instead of a gold, silver or bronze medal, the successful exhibitor will have to be content with a certificate announcing his victory. Considering the financial condition of the Exhibition, it was prudent to substitute paper for metal. The number of gold medals awarded would require a large expenditure on the metal if they were distributed. The Japanese, for example, gained no less than 144, and Germany 545. In one sense a certificate may be as efficient as the gold medal it represents, but for business purposes we doubt if it will be as telling in the eyes of intending purchasers of the goods that were premiated.

Düsseldorf has succeeded in gaining recognition as one of the art centres of Germany, and in the opinion of many it rivals Munich. The Düsseldorf school has always had prominence, although there have been many variations of style which were in vogue among the painters. At one time the paintings were mainly illustrative of religious subjects, at another time of landscapes. The colouring was also peculiar, and apparently efforts were made at all costs to avoid the shortcomings which were common in the majority of German towns. Besides pictures, other products showing a love of art have made the name of Düsseldorf familiar. The exhibition which it is proposed to hold in 1902 is intended to be educational as well as interesting, and will be arranged so as to produce improvement not only among craftsmen, but among artists of all classes. With that intention, it has been decided to bring together a more important collection of works of art, produced in surrounding parts of Germany in Mediæval and earlier times, than was seen before. All varieties of art will be represented. Several archæologists have undertaken to report on the treasures which are available, and as the Government authorities are favourable to the project, it is considered that the collections will realise all the anticipations of the projectors. Professor Clemen and Dr. Meydanhauer will have charge of the architectural section, and all that can be done by drawings, photographs and models to represent the most interesting buildings in the Rhineland and Westphalia will be attempted. The preparations are on so vast a scale, they cannot be completed in a shorter time than remains before the opening of the exhibition.

The Province of Quebec Association of Architects has adopted the following schedule of charges:—"For plans, specifications, working drawings and superintendence on all classes of buildings, except such as are hereinafter excepted, a commission of 5 per cent. on the total cost of the work. On three houses of similar design and on single stores and warehouses, 4 per cent. On four or more houses or two or more stores or warehouses of similar design and on all factories, 3 per cent. Partial charges to be as follows:—For preliminary studies, sketches, one-fifth of the above charges. For complete plans and specifications, including the preliminary studies, one-half of the above charges. For details, one-fifth of the above charges. For superintendence of works when drawings are not furnished, 2½ per cent. on the cost of the works. For work in alteration of premises the amount of commission to be 7½ per cent. For work in which the expenditure is mainly for skilled labour, namely, for monumental work, fittings and furniture, and for decorative work, stained-glass and such like, the commission to be 10 per cent. on the outlay. Travelling expenses, including time lost in travelling, to be paid by the client, if the work is executed at a distance. Valuations of property requiring measurements and a detailed estimate, where the value does not exceed 5,000 dols., 1½ per cent. Where the value exceeds 5,000 dols. the commission to be 1½ per cent. on the first 5,000 dols., and 1 per cent. on the remainder. All works, studies, consultations and proceedings that are not covered by this tariff shall be remunerated according to the 'quantum meruit.' Drawings and specifications are the property of the architect, who only lends them."

The housing of the working classes is at present under consideration by the Munich authorities. The municipality propose to expend 4,000*l.* on an inquiry into the subject, which is expected to take a couple of years to complete. The municipal employés, owing to the rise in rents, have to receive an extra allowance, for it is found that an official with less than 150*l.* a year cannot without some privations dwell in Munich. The question as it affects the working class had consequently to be considered. Last year a society for the improvement of artisans' dwellings was constituted, in the expectation of the shares being taken up by the authorities, or their advancing money on loan. The cost of a dwelling is estimated at 210*l.* to 250*l.*, and it is suggested that the town should advance on loan about one-third of the cost, so that for 1,000 dwellings for municipal employés an advance of about 60,000*l.* would be required.

Every attempt to discover the causes of the perfection of the Parthenon demands respect. On that account the paper by Mr. Decker, which we reprint from the *American Architect*, in which he endeavours to uphold Braun's theory that the horizontal lines of the temple were made to harmonise with the horizon of the sea, is sure to be read with interest. The Greeks undoubtedly loved the sea, and there was from the first an association between Neptune and the temple. The calculations of Mr. Decker serve to uphold the probability of some such theory as Emil Braun's.

Polarite is a very recent discovery, but it is coming into use for the purification of water which is ferruginous. Mr. P. H. Palmer, who has charge of the Hastings waterworks, says that he has found a filter-bed made up of 6 inches of coarse sand above 12 inches of polarite allows water to percolate quickly, and the filtration was as efficient as if it had taken a longer time. All the water supplied to Hastings, which in quantity exceeds a million gallons daily, is now filtered through polarite. Mr. Palmer is having six filters constructed of steel plates, each capable of allowing 10,000 gallons per hour to pass, and the only filtering material to be introduced will be polarite. In Leighton Buzzard the water was so charged with iron as to have an inky taste, but after filtration through polarite that defect is removed and the water is clear.

Among the new books and new editions to be issued by Mr. B. T. Batsford during the autumn season will be the following:—"Old Cottages and Farm Houses in Kent and Sussex," by W. G. Davie and E. Guy Dawber; "Some Architectural Works of Inigo Jones," by H. Inigo Triggs and H. Tanner, jun.; "Later Renaissance Architecture in England," by John Belcher and M. E. Macartney (complete in two volumes folio); "Flower Studies for the Use of Designers and Art Students," by Jeanie Foord; "New Tables for the Solution of Ganguilet and Kutter's Formula," by Colonel Moore, R.E.; "Building Specifications for Architects, Surveyors and Builders," by John Leaning, F.S.I.; "Building Construction (Elementary Course)," by Charles F. Mitchell; "A History of Architecture," by Professor Banister Fletcher and B. F. Fletcher (third edition); "Waterworks Distribution," by J. A. McPherson, A.M.I.C.E.; "Sanitary Engineering," by Colonel Moore, R.E. (second edition); "Estimating," by George Stephenson (fourth edition); "Stresses and Thrusts," by G. A. T. Middleton (second edition).

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: THE NORTH SIDE OF NAVE SHOWING TRIFORIUM ARCHES.

SKETCH FOR REREDOS, SHALDON CHURCH.

PROPOSED ADDITION, HIGHLAND COUNTRY HOUSE.

HOTEL RUSSELL, RUSSELL SQUARE.—VIEW SHOWING FRONT AND SOUTH SIDE.

THE PROGRESS OF SCIENTIFIC IDEAS.*

LOOKING back at the addresses of my many distinguished predecessors in this chair, I find that, devoting their attention as they have done either to the general progress of engineering knowledge or to those particular parts of it that have engaged their personal study, the possible field of observation has become somewhat circumscribed. Everyone, I think, must by this time be fairly well acquainted with the progress made in our work during the present century or during the reign of Her Majesty the Queen. But although this detailed examination of progressive advancement may appear at first sight to be exhausted, yet it may be not altogether unprofitable if we endeavour for a few minutes to consider how, and under what circumstances, that advancement has alone become possible. Living as we do at the end of the nineteenth century, and surrounded as we have all of us been from our earliest years with a march of progress unequalled in the world's annals, we are apt to assume that the circumstances which surround us, the general attitude of the scientific mind, and our conception of nature and its phenomena, are things which come to us by nature as our birthright, forgetting that they are the result of thousands of years of work and thought among some of the greatest minds that the world has ever produced It may not, therefore, be displeasing to the audience which I see before me if in an imperfect way I attempt to lay before them some, at all events, of the salient facts which lead up to our present outlook on the scientific matters with which our profession deals.

We as civil engineers define our profession as being "the art of directing the great sources of power in nature for the use and convenience of man." Consequently, our success or otherwise will depend on the estimate we may form of nature as a whole, and of those great sources of power which it places at our disposal. Undoubtedly in the history of the world there has never been a period when the study of nature has been so open and free from all prejudices of any kind whatever as it has been during the present century; nor, perhaps, with but few exceptions, has there ever been in any age or country a time when nature and her laws have been investigated with so pure and steadfast an aim after actual truth, without the mind being prejudiced by authority or preconceived ideas derived from those great departments of human thought which deal more particularly with matters of faith, morals and religion. This equanimity of mind in which we now approach all subjects relating to science has not, I need hardly say, been the case in the past. Some persons may ascribe it entirely to the inductive method introduced by Bacon, as opposed to the too exclusive confinement of the mind to the deductive systems of the older scholastic philosophy which preceded his time, and to which in a large measure he was undoubtedly instrumental in giving the death blow.

This view, however, is not altogether correct, for in the teaching of Socrates and Aristotle we find continued reference to the importance of inquiry, observation and induction. And in the cases of Hipparchus and Ptolemy in the best days of the Alexandrian school of astronomy we find the most laborious observations carried on for hundreds of years under circumstances and with instruments which we should now consider totally inadequate; and by their means discoveries were then made with an accuracy which surprises us, and from these discoveries conclusions were drawn which for more than a thousand years stood the test and satisfied the requirements of some of the most acute thinkers of the world. We should, I think, in the first instance inquire how it came about that the great mental energies of philosophers of the ancient world failed to produce that fruit which we in later ages are gathering in such rich abundance. To arrive at some idea on this question we must endeavour to picture to ourselves the inner consciousness of the great minds of antiquity when they first began to contemplate the circumstances by which they were surrounded, and were called upon by that inexorable and mysterious longing of the human mind to answer those great questions of the whence and the whither which are so strangely rooted in the hearts of all deep-thinking people. To them was presented for the first time those great phenomena of nature by which we are always surrounded, many of these being of a character at once to charm and at other times to terrify the beholder. And in what I may call the childhood of the human mind, they, like children of a later age, were prone to ascribe to what they saw around them qualities and properties to which the phenomena in themselves had no relation. What I may call the nascent deductive principle so strong in all our minds had given to it by those ancient philosophers the free play of fancy and imagination which led them to conclusions based on their own ideas, and not upon the facts of unerring nature. Consequently we see in the early age of Greek thought the natural laws of the universe in smiling morn or darkening night, in raging sea or the thunderbolts of heaven, ascribed to the immediate action of benevolent or malevolent powers in the celestial world, and as a consequence the Greek mind from its earliest period became saturated with the beautiful conceptions of her poets, and following from this when philosophy first approached the subject, theories were broached and conclusions were adopted many of them on an utterly erroneous basis. Steeped as the Greek mind was in its lovely ideals of nature, it is not surprising to find that when their philosophers began to formulate their theories, these deductions took the place of fact, and celestial observations when they made them, as they undoubtedly did, were used not for the purpose of illustrating the laws of nature as we interpret them, but as a means, partly religious and partly philosophical, in support of their preconceived ideas of the universe, the foundations of which, having been laid in poetry, became crystallised in the wonderful conceptions of the great men who directed their country's mind.

In looking, therefore, at nature in the earlier ages of scientific thought, we find the standpoint from which everything was viewed was narrowed down to a universe constructed for man alone, the powers of which were governed by the caprice and whim of the great gods of Olympus, and yet even in this period we notice true opinions arising with regard to the structure of the universe. For instance, Pythagoras and Aristarchus conceived the idea that the sun was the centre of the universe and that the planets revolved around him. This correct deduction was to a large extent vitiated by bringing it into relation with another conception, that of harmonics. Hence we find the true ideas of Pythagoras mixed up and in a sense confused by this theory of the harmony of the spheres. And even when at a later period more accurate observation gave the ancients still better data on which to reason, they yet continued to ascribe, as the very names of the planets indicate, connections between them and the gods. The outcome, however, of the teaching of the Greek schools, culminating as it did in the splendid work of the Alexandrian philosophers, resulted in the mistaken formula that the earth was the centre around which all the phenomena of nature were carried on. It must not be imagined for one moment that Hipparchus and Ptolemy were not acute and accurate observers. They at an early period detected some of those inequalities in the moon's motion which require all the force of the gravitation theory to explain. They defined by patient observation the irregular motions of the planets, sometimes progressing, sometimes retrograding, and with wonderful accuracy they were able to measure the precession of the equinoxes which carries the equinoctial points backwards along the line of the ecliptic. They had a very clear conception of the rotundity of the earth, as we know from the fact that they made attempts to measure an arc of meridian. All this wonderful mass of observation and discovery, when taking into consideration the imperfect means at their disposal, will ever remain throughout all ages one of the greatest monuments to perpetuate the fame of the men who produced it The question at once arises, How was it that with their wonderfully accurate observations and their perfect knowledge of the movements of the heavenly bodies they did not arrive at some of those revelations which later ages have brought to light? It is difficult to answer this question with any degree of precision, but one can see clearly that their minds were governed and the results of their inductions vitiated by conceptions such as those of which I have above spoken.

Turning now to the domain of mechanics, with which was intimately bound up their ideas of geometry, we find, as our old friend Euclid has long since taught us, that they were not only among the most acute reasoners, but that they possessed logic which, when applied to such conceptions as these, has remained after 2,000 years the text-book in our schools. But in their estimate of the uses of geometry and the functions of the conic sections, the philosophers of old regarded them mainly as a species of intellectual athletics by which the mind was trained and perfected, and they believed it was degradation to apply that knowledge to the affairs of mundane life. In the case of Archimedes we see the master-mind grappling for the first time with some of the great problems of mass and of force, and solving to a large extent some of the principal problems placed before him. But here also Greek notions of mass and of force were mixed up with others, which ascribe to them properties perfectly ideal, and it was considered, in the words of our great poet, that the application of these wonderful discoveries to the affairs of life was "base mechanical." No doubt much of this was due to the fact that the teachings of the old Greeks were held to be exclusively the property of certain schools and academies, and that the culture of the mind was the object in view. On the other hand, all the affairs of life connected with the mechanical arts were confined for the most part to a large section of the people who were held in slavery, and who, with but few exceptions, never rose to intellectual pursuits. But, above all, as their ideas crystallised into the form of concrete theories nearly allied to many supernatural conceptions, these were gradually absorbed by the priesthood and mingled with the national faith, to differ from which, as in the case of Socrates, meant recantation or death. Reviewing, therefore, the above impressions of the ancient world, we find the most accurate observations combined with the most fanciful theories, worked out with a logical and mathematical skill which all the world admires, yet vitiated by conceptions or theories based on fanciful resemblances, and the whole gradually consolidated by priestcraft into a mass of superstitious dogma, to differ from which was to incur the odium of heresy. We shall see as we proceed that this palsy of the mind was again repeated after a lapse of 1,500 years.

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* The presidential address delivered by Sir A. Binnie in the Section of Mechanical Science of the British Association.

In the early centuries of our era a great change was coming over the human mind. Even before the advent of Christianity thinking men were beginning to revolt against the superstition of the old mythology. Soon after there arose the Neoplatonic school at Alexandria, which mixed up, in a way difficult to describe, beautiful conceptions of moral and religious training through astronomy and the sciences in an inexplicable tangle of pseudo-Greek philosophy. At the same time there was gradually stealing over the minds of men an entirely new feeling, born of a new faith, which taught that things earthly and appertaining to the earth were of slight importance, and that all the splendid learning of the Greeks was but vain philosophy, and that the thoughts of man must be directed not to the present, but to the future. Among these conflicting ideas there was intruded the other barbaric power which knew nothing of science or of philosophy, but which by its virile force and austere tenacity of moral worth overran and conquered the Roman Empire. These untutored peoples were soon attracted by the beautiful simplicity of the new religion and were gradually absorbed into the Christian Church. In the year A.D. 640 a serious blow was struck to advancing science, and for a thousand years we are parted from all the learning of the ancient world by the destruction of the Alexandrian library by the Saracens. Then followed for nearly a thousand years that period of intellectual torpor which we generally denominate "the dark ages." To a large extent natural science became unknown, the astronomy of the Greeks degenerated into astrology, and when occasional thinkers did inquire into nature's secrets it took the form of alchemy, and a desire to discover the philosopher's stone and the transmutation of metals. Mixed up with these were also a school of magicians, individuals who revelled in mysteries—always an indication of ignorant superstition. During this period the ideas of the universe were taught from the books of Moses; even the learned lost all conception of the rotundity of the earth, and, indeed, we have treatises written to prove that we live on a flat world. Of course, during the period I am speaking of there were some minds, in isolated cases, which still believed in the teaching of the Ptolemaic system. But the overruling authority of the Church crushed out all inquiry into the nature of things, deeming it sufficient that men should either remain ignorant or devote their attention to a future existence. At length, however, after the conquest of Constantinople, in 1453, there came a period when the literature of the ancient world again claimed attention and the logic of Aristotle became the dominant factor in the teaching of the Church. Another element was also contributing to the revival of the human intellect.

The Saracens, after their conquest of Alexandria, had preserved in the universities of Bagdad and Damascus much of the learning of the philosophers of the ancient world. This in the course of time followed their conquests along the northern coast of Africa, and was gradually grafted into the European mind by the teaching of the doctrines of the school at Salamanca, and it is to this channel, strange to say, that we are indebted for what we know of the tenets of Hipparchus and Ptolemy, as well as for many of the alchemistic sciences which they themselves assiduously cultivated. Thus gradually we see dawning upon the benighted minds of the Middle Ages a revival of the learning of the ancient world. The invention of printing and the lessons of the Reformation at once threw open the whole question to independent thought, and at the same time afforded a means of free interchange of opinions throughout the whole world. About this same time the vexed question of the earth's rotundity was for ever set at rest by the discoveries of Columbus in 1492, and the circumnavigation of the globe in 1522. I now approach a period when it becomes necessary to show, with somewhat more exactitude than that with which I have hitherto treated the subject, how gradually there grew up in the minds of men those modern truths to which I have alluded in the opening passages of my remarks.

At the stage at which we have arrived it is as well to conceive what must have been the feelings of men, especially of Englishmen, in the middle part of the sixteenth century. By the Reformation their minds had been opened to the exercise of private judgment, and there was presented before them a circumstance never before experienced, nor which can ever again appeal to the human mind. By the discovery of the new world the earth space had been practically doubled. These two great factors, freedom of thought and enlargement of the world, aided by printed books, produced fresh fruit in literature and science, and an enthusiasm, almost amounting to the romantic, which carried men on to enterprises of the most daring kind, and filled them with the confidence that a great and brilliant future was in store for the human race. The poetry and literature of the Elizabethan period teem with these sentiments, and these feelings sank deep into the minds of thinking men when they contemplated more serious subjects. Peter Ramus (1515-72) attacked the Aristotelian philosophy. Copernicus (1473-1543) revived the idea of Pythagoras and Aristarchus, that the sun and not the earth was the centre around which it revolved in company with the other planets. He, however, still retained the notion that they revolved in circles, and had, of course, to resort to epicycles, deferents and the like to account for their apparent irregular motions. At a later period Tycho Brahe (1546-1601) was carrying on a series of astronomical observations of an accuracy never before attempted, and although he did not accept the Copernican theory, yet he so far began to lose faith in that of Ptolemy as to propound a theory of his own to reconcile his more accurate observations. About the same time William Gilbert (1540-1603) published his work on the magnet, and Sir Francis Drake, led away by that enthusiasm of which I have already spoken, in his great voyage round the world added new glories to English navigation. As conceptions more exact and observations more accurate were made, it became necessary in some way to shorten the laborious calculations previously carried on. Hence we get about this time the invention of logarithms by Napier of Merchiston. But this evident advancement of the mind was opposed fiercely by the powers of the Church, resulting in the burning of Giordano Bruno at Venice in the year 1600 for upholding the Copernican theory.

There now came upon the scene one of the greatest thinkers of our country, to whom all Englishmen, if not all Europeans, should feel the deepest gratitude, the great thinker Francis Bacon, who in his various works which he has left behind him bequeathed to future ages that system of inductive philosophy which has done so much for the advancement of learning. As you will remember, his first doctrine is that we must avoid the errors which are inherent in the human race, and which he classes under the four heads of "Idols of the Tribe," "Idols of the Den," "Idols of the Forum or Market" and "Idols of the Theatre." Having got rid of erroneous and preconceived opinions, he lays down rules of right thinking, afforded by scientific facts which have been invaluable in the investigation of science. He does not touch upon religious and controversial subjects which engaged the attention of so large a proportion of his contemporaries, but directs the whole force of his philosophy to the acquisition of what he calls "fruits," that is to say, the pursuit of truth for its own sake. And as Macaulay says of him, although he is best known by his essays, yet of his more philosophical works he remarks that "they have moved the intellects which have moved the world."

We now have to consider for a moment a name which should be highly honoured among all men of science, but especially among engineers, for to Galileo we are indebted for the first principles of mechanics. He invented the thermometer about 1602 and the telescope which bears his name in 1609 In 1586 he composed his first essay on the hydrostatic balance, and his observations on the swinging of the great bronze lamp in the cathedral of Pisa, as well as his experiments on the centre of gravity and on falling bodies from the leaning tower, laid the foundation of the exact determination of some of our simplest mechanical conceptions. His astronomical observations of the moon, his discovery of Jupiter's satellites in 1610, as well as the rings of Saturn and the phases of Venus, gave to the Copernican theory the basis of fact which was before wanting It is needless to say that Galileo advocated most strongly the theory of his predecessor Copernicus, and for the doctrines which he so taught he was brought before the Inquisition, imprisoned, and his latter days rendered miserable by the persecution of the Church. Contemporary with Galileo was his illustrious correspondent Kepler, who in the most laborious manner, from the observations of Tycho Brahe and other accurate astronomers, gradually gave to the world those laws which bear his name, and fixed for all time the fact that the planets revolved around the sun, not in circular, but in elliptical orbits. These teachings, assisted by the illustrious Gassendi, were gradually forming in the minds of men a somewhat more accurate idea of the universe in which we live. We now come to one of those great minds who, in the realm of philosophy, had a vast influence in turning the thoughts of men into direct channels. I allude to that distinguished Frenchman René Descartes. I do not propose to inquire into his axiom, "I think, therefore, I am," into his conception of innate ideas, nor into his theory of vortices, but would merely point out what may be almost called his great discovery, namely, the application of algebraical reasoning to geometrical and astronomical observations. Of course his freedom of thought offended many, both the Jesuits, in whose school he had been educated, and the pastors of the Reformed Church, among whom he lived in Holland. And it is well known that he delayed to give to the world some of his best ideas owing to the way in which Galileo had been treated by the Church. The English philosophical writer, Thomas Hobbes, by the publication of his work called "The Leviathan," was also educating the minds of Englishmen in the direction of sound knowledge. It is interesting, however, to note that the new ideas had not as yet sunk deeply into the minds of the English people. Shakespeare remarks, "He that is giddy thinks the world turns round" ("Taming of the Shrew"). Bacon also never accepted the Copernican theory, and if we turn to the eighth book of "Paradise Lost" we find that although Milton, who had visited Galileo in Italy, and who was well acquainted with the theory of Copernicus, founds his whole poem on a Ptolemaic basis, yet was, apparently from the words which he puts into the mouth of the archangel Raphael, halting between two opinions. We have now to note another of the experimental philosophers in Christian Huyghaens. Up to his time the means of making accurate observations in which time was concerned was a most difficult, nay almost an impossible matter. By his introduction of the pendulum as a regulator of clocks he at once placed in the hands of men of science one of its most valuable instruments. His work on the centre of oscillation and the cycloidal curve shows how deeply he worked out the theory. His observations on double refraction, and his promulgation of the theory of an elastic ethereal medium in which the vibrations of light are carried on, place him in the forefront of the observers of his time. The sagacious Hooke, Wren, Wallis, and Newton's great master Barrow, as well as the distinguished Boyle and the indefatigable Oldenburgh, were all carrying forward the work which distinguishes this period; and when we look back to those pleasant meetings at Wadham College, Oxford, during the Commonwealth we contemplate a body of men working for true science who were to be the founders of that Royal Society which has done so much for the advancement of science throughout the world. The labours of all the great men of whom I have yet spoken were at this period gradually drawing together a vast mass of facts which required some common explanation. The rudiments of mechanical science were beginning to teach the truth as to the laws of falling and oscillating bodies. The Ptolemaic system, with its complex theories, was gradually yielding to the accumulated evidence in favour of the Copernican system. The erroneous idea of circular motion had yielded, as the fruit of Kepler's persevering work, to the law of elliptical orbits. But yet the minds of many men were still directed by the idea that the planets were carried round the sun by some inherent force in themselves, and in the same very imperfect way they were beginning gradually to think that this force, be it what it might, acted in inverse ratio to the square of the distance.

Matters were in this state when there arose the greatest genius that the English race has yet produced—the retiring, the sensitive and the devout Isaac Newton, who, acting like an electric spark in a mixed and chaotic mass of vapour, at once precipitated, as it were, the confusion and brought to light with a dazzling brilliancy the gravitation theory, which not only accounted for all the difficulties which his contemporaries were struggling with, but at one bound elucidated those many and confusing motions of the heavenly bodies which had hitherto been the stumbling-block of observers. By his discoveries, for the first time an accurate scale was given to the universe, and in his statement that every particle of matter in the universe is attracted directly as the mass and inversely as the square of the distance, we have laid before the world once and for all time a sure and certain guide to all the phenomena of nature. He reveals to us distances incomprehensible, and magnitudes which transcend the most fanciful ideas of his predecessors, and flowing from this we have established the important conclusion that as far as matter is concerned, whether in the case of our own planet, in the sun, in the mighty orbs of Jupiter and Saturn, or in the distant nebulæ and stellar masses, the whole is governed by exact law, and is not a fortuitous concourse of atoms or the result of some unexplained and inexplicable vortex motion. We must now turn to the contemplation of a great thinker who, although not a scientific man, has yet had a most profound influence in the direction of clear reasoning of perhaps any man in England since the time of Bacon. I allude to the illustrious John Locke, the friend of Newton, of Boyle, of Monmouth, of Somers, of Clarke, of Montagu, of Pembroke and of Shaftesbury, admired alike by Horace Walpole and by Voltaire, and the trusted friend and councillor of William of Orange. Intimately connected with the freedom of the Press and the currency of this country, one of the first commissioners for trade and the colonies, he is principally distinguished by his charming essay on "The Human Understanding" Putting aside the metaphysical conception of Descartes, he lays down the law that all our knowledge must be founded on two principles, experience of the outer world through our senses, which he calls "sensation," and the inner working of the mind on the experience so gained, which he calls "reflection." To his clear and lucid English which appeals to every reader taken in conjunction with the simple facts which he enunciates, the English nation is indebted for much of that common sense and freedom from fanciful speculation for which we are distinguished among the nations of the world. At the end of the seventeenth century, Boyle, Hooke and many others of their illustrious contemporaries were, in the early days of the Royal Society, founding that school of physics and chemistry which, taking the place of the alchemy and the magic of the Middle Ages, was being gradually moulded into shape in accordance with true induction and in a scientific spirit. But little had yet been done in the study of the earth itself. Pliny mentions the fact that fossil shells had been found; and Leonardo da Vinci, about the beginning of the sixteenth century, had argued that these fossils were the remains of extinct beings, and not lusus naturæ formed by the action of the stars on the plastic substance of the earth; nor, as taught by the Church, shells dropped from the hats of pilgrims on their way from the Holy Land. And even at the end of the eighteenth century Johnson spoke, as it will be remembered, of people engaged in such a study as "fossilists." We are indebted, however, for right thinking on truly scientific lines to Hutton, to Playfair, to Werner and to Cuvier, who about the end of the eighteenth century began to formulate distinct and clear conceptions on the subject. The rocks of which the earth's crust was composed were gradually being divided into aqueous, plutonic and metamorphic. It was clearly established that among the aqueous deposits the various strata contained fossils different both in kind and in species from those of living beings. To our illustrious countryman William Smith we are indebted for the first geological map of central and northern England. Controversies arose as to how the great succession of events which accurate inquiry was unfolding to our knowledge was produced; whether upheavals and depressions in the earth's crust were due to sudden cataclysms, dividing and shutting off as it were each successive period from those which preceded or succeeded it; or whether, as some imagined, they were the result of the Noachian deluge.

And in the beginning of this century fierce discussions arose as to whether or not the whole tendency of these investigations was not intensely irreligious, as it appeared to be at variance with the account of the Creation as given by Moses. In 1830 to 1833, however, by the publication of his "Principles of Geology, or the Modern Changes of the Earth and its Inhabitants," Sir Charles Lyell, following on the lines laid down by Hutton and Playfair, in the most philosophic spirit proved beyond a doubt that all the great changes which geology disclosed were the outcome of the action of those forces of nature which we see around us, operating with greater or less energy throughout long ages. Lyell did not attempt to theorise on how or why the remains of extinct animals and plants succeeded each other in the rocks, but he pointed out in the most precise manner that, whether we take the primary, the secondary, or the tertiary periods, the different series of organisms, of which we find the remains, were each distinctive of its particular zone; and that as we examine the tertiary strata their characteristics become more and more similar to the animals and plants which we see around us at the present day. Newton had taught us that the sum of space throughout the universe is practically unlimited, and that the whole is governed by law and not caprice. The teaching of geology has instructed us in a somewhat similar way that the time over which the present forces of nature that have tended to form the earth, as we now see it, have operated, is to be measured, not by 6,000 years, but by many millions of years. I do not pretend to enter upon the vexed question of how many millions of years, but what I wish to direct your attention to is that, as astronomy teaches an almost infinite space, geology teaches not perhaps an infinite but a vastly extended period of operation almost beyond the grasp of the human mind. I have spoken above of the action and interaction of the thoughts of our predecessors and contemporaries in forming and originating new scientific conceptions in different periods. A curious example of this is to be found in modern science. Malthus published his essay on population in 1798, Sir Charles Lyell his "Principles of Geology" in 1830 to 1833.

The great Charles Darwin has told us that it was by the study of these two books that he was first led to contemplate those changes in nature, and to amass that vast collection of scientific thought, which resulted in "The Origin of Species," published in 1859, coincidently corroborated by the illustrious Wallace. The co-operation of these two great thinkers, the graceful way in which the younger gave place to the older observer, marks an advance in the kindlier feelings of contemporaneous scientific workers, in marked contrast to the virulent and often acrimonious controversies which characterised the period of Descartes and Newton. I am not going to enter into a description of the Darwinian hypothesis, but it is sufficient to say that putting on one side for a moment the details with which it deals, the teaching of Darwin has produced during the last thirty years an entire revolution in our ideas, whether we look at them in literature or in science, by which we begin to understand how, in the long series of past ages, the various organisms which we find in the fossil state have passed gradually and almost imperceptibly from a lower to a higher state of organisation. And possibly in the teachings of our great countrymen we see, for the first time, perhaps, in a somewhat dim and distant way, a scientific reason for the origin of those innate ideas which formed so large a portion of the teaching of that great Frenchman René Descartes. And, again, we see in the teachings of science the reiterated lesson that nature works by slow degrees in an orderly and regular succession, ever advancing, ever improving, and not by spasmodic jerks, and the train of such ideas naturally leads the mind to the contemplation of a future more perfect and more beautiful in all that is good and true. It is not my object to trace the advance of science in all its branches down to the present time. I have above indicated the general lines along which the human mind has advanced in laying the foundations of our modern views; but so intimately are we, as engineers, connected with all the sciences that I must just refer in the briefest manner to the development of chemical science as it grew out of the teaching of Aristotle and Galen—that there were four elements to the acid and alkaline discoveries of Sylvius, through the teaching of Geoffrey and Stahl of the phlogistic theory. We then have the discovery of oxygen by Priestley and fixed air by Black and Cavendish, composition of water by Cavendish, Watt and Lavoisier, followed by Davy and Dalton, the latter of whom formed our present conception of the atomic theory and the combination of the elements in their true proportions. Through Davy, Faraday and Tyndall we gradually arrive at our electro-chemical ideas of the present day.

We last year had so lucid an exposition from Professor Fleming, at Dover, of the march of progress in electrical science during the past century that it would be presumption on my part to attempt to recapitulate even the names which extend from William Gilbert, in the sixteenth century, down to the discoveries of Hertz of the present day. But I may be permitted to point out that from the time of Volta, Ampere and Oersted, the rapid progress which electrical science has made has been due in no small measure to the manner in which its experiments have been treated on strictly mathematical lines by the master minds of such men as Maxwell and Kelvin, until at last we arrive at the demonstration, long foretold, of the wave theory, which renders wireless telegraphy an accomplished fact. Light to the engineer has at all times been of supreme importance, and we scan the names on the chart from Galileo, Descartes, Huyghaens, Gregory, Newton, up to Rohmer's discovery of its velocity, through Halley, Herschel and the illustrious Thomas Young, who perfected the undulatory theory, until at last we eventually come to those mysterious Fraunhofer lines, noticed also by Wollaston, and which were interpreted by Bunsen and Kirchoff in 1860, since which period they have been applied as an aid to chemistry in the analysis of terrestrial and celestial bodies. In the theory of heat we have the experiments of Cavendish and Priestley investigated by Count Rumford, illustrated by Tyndall, and bearing fruit in Joule's mechanical equivalent. Perhaps none of the allied sciences appears so distant from our own profession as that of physiology. The discovery of Harvey gives us, however, a beautiful insight into animal mechanics; and the observations of Leeuwenhoek about the year 1700 first bring us into contact with those minute organisms which he discovered by means of the microscope, and which are now found to play so large a part in the economy of nature. Up to within the last twenty years it was generally held that dead organic matter, animal and vegetable, could but, in the words of Shakespeare, "lie in cold obstruction and to rot," this process being assisted, it was assumed, by chemical oxidation; and, until the researches of Pasteur and Koch, we were entirely ignorant of the fact that nature had at her command countless millions of organisms, always reducing the effete products of animal and vegetable life back into simpler elements. The tendency of later years has clearly been, whether we look at the links which unite heat and work, chemistry with electricity and magnetism, and light with both, or physiology with chemistry, to obliterate those boundary lines which we have been accustomed to regard as fixed, and from the time of the publication of Sir W. Grove's correlation of the physical forces in 1846 we have made continued advances in the same direction.

What the future may have in store for us we cannot imagine, but clearly, if we compare the facts known at the commencement of the nineteenth century with those in our possession at the beginning of the twentieth century, we may look forward to a still richer harvest of what Bacon calls "fruits." Looking back upon the facts that I have been enabled, and I feel so imperfectly, to bring before you, I have "to answer" the question with which we have set out. Modern scientific thought is due to an inquiry into nature and her works, irrespective of all preconceived theories, and the breaking away from the authority which other departments of human thought and faith have in former ages imposed upon some of the earlier inquirers into science. Faith in religion has been defined as "the substance of things hoped for, the evidence of things not seen," which is quite apart altogether from the other and wider faith with which the scientific inquirer contemplates that vast, that stupendous, that beautiful universe which has been revealed to him by the teaching of his predecessors, and which inspires him with those hopes to which I have just alluded. On the teaching of the ancients Bacon remarks:—"The opinion which men entertain of antiquity is a very idle thing, and almost incongruous to the world; for the old age and length of days of the world should in reality be accounted antiquity, and ought to be attributed to our own times, not to the youth of the world which is enjoyed among the ancients, for that age, though with respect to us it be ancient and greater, yet with regard to the world it was new and less." The idea is perhaps more and more beautifully expressed by Tennyson in the words, "I, the heir of all the ages in the foremost files of time." And in another respect, taking Bacon's teaching which he so often reiterates, as being a search after fruits, we must not imagine that the fruits of which he speaks are necessarily to be gathered in by the worker himself. For the pursuit of true science is often hindered by the too greedy effort to grasp the sordid rewards of the present, and, alas! Bacon himself will ever stand as a most painful example of the depth of degradation to which even the highest minds may fall. We must learn from nature what she is continually teaching, that her efforts are directed not solely for the benefit of the individual, but for the welfare and the advancement of the race. The fruits and the rewards which grow from a study of nature and a truly scientific effort to expound her laws, are of a higher and a wider scope. And in contemplating the work of the great men of the past with whose names we have been so freely dealing, looking at the present attitude of the scientific mind and our share in the application and directing of those great sources of power in nature, we may say:—

> No more a wind-borne leaf upon the waves
> Of time and chance, but one to whom is given,
> To help the mighty purpose of the world,
> To straighten crooked paths, to smooth the hills
> Of sin and sorrow, that on some bright day
> The great wheels of the world may run their course
> Without one jar or check.

ENGLISH AND COLONIAL SURVEYS.

A COMPREHENSIVE account of the British, foreign and colonial general surveys was given by Mr. E. G. Ravenstein in the Geographical Section of the British Association. He said that even yet the only country which had approached the ideal of an ordnance survey was the United Kingdom, but he was bound to acknowledge that there was much still left to be desired. If the proposals of the committee appointed in 1897 in France to spend 20,000,000*l*. on an ordnance survey were carried out the British Ordnance Survey would, he thought, find it necessary to re-examine its own position, and to accept certain improvements which had been suggested and were necessary to bring the British survey up to the new French standard. In most European countries there were plain table maps based on cadastral surveys, which answered most requirements, and enabled the engineer to lay down in a general way any road or railway, but were not at all perfect as surveys. They must not forget, however, that if all the European countries had gone in for an exact survey like that of Great Britain or the proposed one of France, we should at the present time have had no map at all, or it would be like the ordnance map of Bavaria, published some time in the sixteenth century. Speaking of Asia, he said Cyprus had been surveyed by British officers, of whom Lord Kitchener was one. Palestine had been fairly well surveyed by Royal Engineers, and Lord Kitchener with them. As to India, it was most creditable to the British Government that the topographical map of the British possessions there was quite on a level with the so-called topographical maps of most European countries. The atlas of India—founded on cadastral surveys, village surveys—was kept up to date as far as possible. The Dutch had made valuable surveys in Java and Sumatra, and the French had begun a cadastral survey in Southern China and Tonquin. Japan had introduced the European style of surveying, and in Siam an old Indian surveyor carried on a topographical survey. As regarded China, we were still dependent upon Chinese maps, supplemented by certain surveys made by Jesuits in the last century. Of Russia in Asia there were simply flying surveys, except such as an itinerary survey for the Trans-Siberian railway. Every Australian colony has its surveyor, whose duty was chiefly to provide good parish maps, but these gentlemen had gone beyond that and could produce very satisfactory maps of the colonies so far as they had been surveyed, and he did not think it would need a very great effort for them to bring their maps up to the European standard. In America a good deal of work of the kind had been done, and in Canada there were Commissioners of Crown Lands who surveyed the whole province, and the Dominion Land Office, which made a survey in the Far West. In Africa the French had nearly completed a trigonometrical and plain table survey of the whole of Algeria and Tunis, and in the regions further south they were carrying on systematic reconnaissances, which yielded maps good enough till something better could be done. The Italians at at once began to survey the country into which they entered. The French in Madagascar had entered upon a triangulation and plain table survey.

In British South Africa surveyor-generals had existed from the first, but in addition to the work of these, the Cape Government had carried on a triangulation through the whole of Cape Colony and into Bechuanaland, and he was given to understand that this was a primary triangulation of great value. In Egypt the country below Khartoum had been surveyed and triangulated, the triangulation being attached by telegraphs to the European system. But in the greater part of South Africa we were still dependent upon itinerary experience. We could not call it a survey if a lady went through one or two principal streets and now and then looked into a shop window; and that was just about the survey which most travellers brought home to us. Now and then some European who had stayed for a prolonged period in a particular part of the country had brought home some precise and trustworthy information, but Europeans of this type had generally got other work to look to, and only did this sort of thing in spare time. It occurred to many that the results of these short predatory experimentary expeditions were not equal to the expenses involved, and that it would be better if the production of maps of these countries were undertaken on more systematic lines. In that way a great deal more could be done at less expense. It would be well if a small staff was employed to do nothing else. If natives of India who were trained as surveyors, and in India had rendered excellent service, were attached to these parties they would be able to produce a map of the European protectorate of Africa which would answer all practical requirements, and would be cheaper than the desultory and detached work which was being now done.

Colonel Johnson said he should be very glad if it were possible to get the British military officer to serve in this country in respect to the matter of maps as officers did in France; but unfortunately the British military officer was apparently too valuable, and the Survey Department had the greatest difficulty in getting the number that it required for the work. He took it as a very important thing for this country that the whole of our colonies and dependencies should have satisfactory surveys. In the cases of some dependencies very little in that way had been done. The question which would be foremost in many minds would be as to what had been done in South Africa. There was no doubt that during the last year we had suffered very heavily for want of a satisfactory survey of that country. The question was one to which the War Office was fully alive, but the War Office for years past had made surveys of recently-added dependencies wherever possible and as quickly as possible. Already a complete survey had been carried out at Wei-Hai-Wei, and for years past there had always been a certain number of the staff abroad for such purposes. But the survey of a country like South Africa was much too large a work to be undertaken by the War Office, although there was a certain staff of surveyors working there at the present time. It was so large a matter that it would have to be taken up by the civil Government, and he hoped that that might be done. At present there was a very perfect triangulation. A portion of it was done in the last century. About 1840 this was checked and extended, and about twenty years ago the consent of the Cape Colony and Natal Governments was obtained for the carrying out of a complete triangulation throughout Cape Colony and Natal. This triangulation was done in a very perfect way—almost as well as any in the world; but unfortunately, having done this, they had made no use of it. In the Cape Colony and Natal there were surveyor-generals, and they had had surveys made throughout the country for property purposes; but these surveys, as far as he could ascertain, had no connection with the triangulation, and were entirely isolated pieces of survey, and did not show roads or rivers or villages or hill features, except in so far as these features were necessary to delineate property. The result was that when it became necessary to piece together these surveys, the whole was like a Chinese puzzle, with any number of unknown quantities. The result was that the only topographical maps we have had in South Africa had been a compilation from the property surveys, and these had been very inaccurate. There had also been some triangulation in Bechuanaland. In the Transvaal and the Orange River Colony they had had surveyor-generals making property boundaries, but no triangulation at all, and Basutoland had no survey of any kind. Bechuanaland had a triangulation, but there was no topographical survey which had been based upon it. What was now required was to have the triangulation extended so as to cover the rest of our properties in South Africa. The total area of British possessions—including the Transvaal and Orange River Colony—was now about 850,000 square miles, which was, roughly speaking, seven times the area of Great Britain and Ireland. First there should be a triangulation, for as soon as they had got this any piece of survey which was tied on to that triangulation was good for ever. Hitherto the surveys had been of no permanent value. Having got the triangulation they required a topographical survey on some small scale. The work which was at present being done was on the half-inch to the mile scale, and the surveyors seemed to have found that a pretty good scale to work on. From an approximate estimate which had been made for the purpose it was believed that a survey of that nature—a half-inch survey based on triangulation—could probably be carried out with a reasonable strength of workers in about twelve years at an expenditure of about 25,000*l.* a year, and they would agree with him that in view of the disasters which had occurred and the disadvantages which were likely to be suffered in the future from not having this topographical survey an expenditure of that kind would be very well employed. Of course the half-inch survey would not be sufficient for all permanent purposes.

WRITING IN PREHISTORIC GREECE.

ONE of the most interesting papers read in the Section of Anthropology at Bradford was on "Writing in Prehistoric Greece," by Mr. Arthur J. Evans, M.A., F.S.A. It was in two divisions, the first relating to clay documents, with hieroglyphic or conventionalised pictographic script from the palace of Knossos. The discovery originally announced by Mr. Evans in 1894 of the existence in prehistoric Crete of a system of conventionalised pictographic or hieroglyphic writing had received an extraordinary corroboration and supplement from his recent excavations in the Mycenæan palace of Knossos. The first indications had been supplied by groups of signs engraved on early seal-stones, and by its nature the evidence was limited. But in the great prehistoric building now partially explored at Knossos, the latest elements of which can hardly be brought down later than the thirteenth century, B.C., there came to light a series of deposits of clay archives, inscribed both with hieroglyphic and a new system of linear writing. Those of the hieroglyphic class, though apparently contemporary with the other, were less numerous, and were found in a separate magazine. They were in the form of square and three-sided bars, perforated at the end, clay "labels" also perforated, fern-like bivalve shells, and sealings of clay which also presented impressions of signets with characters of the same conventionalised pictographic class. The graffito characters of the clay bars, &c., gave more linearised versions of the fuller representations of the engraved seals, and thus illustrated a step in the formation of letters. The tablets showed various new forms of hieroglyphs not as yet found on the signets, raising the Cretan series to over a hundred. The pictographic signs might be said to form an illustrated history of Cretan culture to Mycenæan times. Among new characters might be mentioned an eight-stringed lyre, carpenter's tools such as a kind of plane and perhaps a level, dogs' heads, bees, a glove-like object perhaps not unconnected with bee-keeping, and apparently olive sprays. The obviously "ideographic" or "determinative" character of some of the hieroglyphs gives a clue to the meaning of many of the tablets. Ships, ploughs and ox-heads, vessels filled with grains, and the Egyptian palace sign speak for themselves. A boustrophêdon arrangement of the characters is often traceable. Many of these clay records are accounts, as is shown by the presence of various numeral signs, the ciphers never exceeding eight in a group. But the form of numeration still presents points of obscurity. The hieroglyphic script itself shows a certain parallelism with the Hittite inscriptions of Anatolia and Northern Syria. Its beginnings can, however, be traced very far back on Cretan soil, and it unquestionably represents the writing of the indigenous Cretan stock, the Eteocretans of the "Odyssey."

The second division treated of clay documents inscribed with linear script from the palace of Knossos. The great bulk of the clay records discovered in the palace of Knossos exhibited a linear style of writing fundamentally different from that of the hieroglyphic class and far ahead of it in development. The tablets are for the most part elongated slips of hand-moulded clay from 2 to about 7 inches in length and from ½ inch to 3 inches broad; others, however, are of a squarer form. They present some distant analogy to the Babylonian tablets, and the inscription is divided by horizontal lines. The letters themselves, however, are of a free, upright European character. Some seventy characters seem to have been in common use, and of them about ten show resemblances to the later Greek and the same number to the Cypriote syllabary. About the same number of forms are also common to the hieroglyphic Cretan series. The letters seem to have been for the most part syllabic; lines of division appear between the words, and the writing runs consistently from left to right. The pictorial origin of these letters may be traced in some cases. Thus, we have the human head and neck, the hand, the crossed arms, a bird flying, the three or four barred gates, a fence, a high-backed throne, a tree, and a leaf. A certain number are unquestionably ideographic or determinative. Others represent measures and quantities, and are always associated with numerals. A good many of these documents evidently refer to palace accounts, and a clue to the general purport of the tablet is often supplied by the introduction of a pictorial figure. We thus find chariots and horses, human figures (perhaps slaves), axes, ingots, vases of precious metals. Others of clay for various liquids, houses or barns, swine, ears of corn, various kinds of trees and a crocus-like flower, perhaps used for a dye or perfume. A decimal system of numeration was employed, somewhat resembling the Egyptian. The value theoretically arrived at by the author for the numerals was proved by an addition sum presented by one tablet, the total of which worked out correctly.

The ingots depicted on the tablets resembled a Mycenæan copper ingot from Cyprus and others from Sardinia. They were followed by a balance (the Greek talanton) and numerals, apparently indicating their value in Mycenæan gold talents. It has thus been possible to make an approximate calculation of their weight. Objects in precious metals represented were identical with some typical tributary offerings of the Keft chieftains on the Theban monuments of Thothmes III.'s time, and tended to show that some of these clay documents went back to the first half of the fifteenth century B.C.

Other tablets, without ciphers or pictorial figures, perhaps refer to contracts or correspondence, such as the contemporary records of Syria and Babylonia. The tablets had been originally contained in coffers of wood, clay and gypsum, and these in turn secured by clay seals bearing impressions of Mycenæan engraved gems of the finest style. These impressions had in many cases been countermarked with a graffito sign by the controlling official while the clay was still wet, and the back of the clay seal was at the same time endorsed and countersigned with short inscriptions in the same script as that of the tablets. Such legal precautions were quite worthy of the "Palace of Minos."

These discoveries not only carry back the existence of written documents on Greek soil some eight centuries before the first known muniments of Greek writing, and five before the earliest Phœnician, as exhibited in the Moabite stone, but they afford a wholly new standpoint for investigating the origin of the alphabet. The letter forms borrowed by the Greeks from the Phœnicians seem to have been influenced by these pre-existing Ægean scripts. The common elements existing in the Phœnician alphabet itself are very noteworthy. Out of twenty-two original letters, some twelve present obvious points of comparison with characters belonging to one or other of the two Cretan scripts, and to these at least four may be added as showing possible affinities. In view of such parallelism, which extends to the meaning as well as the form of the signs, De Rougé's theory of the derivation of the Phœnician letters from remote hieratic Egyptian prototypes must be definitely abandoned. The Phœnician, and with it the Greek, alphabet must be regarded as a selection from a syllabary belonging to the same Ægean group as the Cretan. Such a phenomenon on the Syrian coast is naturally accounted for by the settlement there in Mycenæan times of the Ægean island race, the Philistines, whose name survived in that of Palestine. Though later Semitised, their biblical names of Kaphtoria and Kerethim, or Cretans, sufficiently recorded their Ægean origin.

ART AND BUILDING IN BORNEO.

A PAPER was read in the Section of Anthropology at the meeting of the British Association by Dr. A. C. Haddon, F.R.S., on "The Textile Patterns of the Sea-Dayaks," in which Dr. Haddon described how the Sea-Dayak women weave short cotton red petticoats and cotton sleeping wraps covered with beautiful and often intricate patterns. The patterns were made, he said, in this way. The warp was stretched on a frame; the women then took the first fifteen to thirty strands and tied them tightly with strips of leaves at irregular intervals, according to the design which she carried in her memory. The next fifteen to thirty strands were similarly tied, and this process was repeated until all the threads had been utilised. The warp was then removed from the frame and dipped in a reddish dye, which coloured the free portions of the warp, while the tied-up portions remained undyed; and thus a light pattern was left on a coloured background when the lashing was untied. If a three-colour design was required, as was usually the case, the first lashing was retained, and various portions of the previously dyed warp were tied up, the whole was immersed in a black dye, and then both sets of lashing were untied. The pattern was thus entirely produced in the warp, the woof being self-coloured and not obtruding itself in the material. There were a very large number of designs and patterns, which were remembered by the women and handed down from mother to daughter. By far the greater number were based upon animals, whereas most of the patterns carved by the men on wooden and bamboo objects were derived from plant motives. The designs embroidered by the women on jackets and loin-cloths are usually zoomorphic in character, but the treatment of the motives was quite different from the decoration of previously described fabrics. The decorative art of the Sea-Dayaks of Sarawak differed in character from that of the Kayans, Kenyahs and other inland tribes.

Dr. Haddon also gave a lecture on the houses and family life in Sarawak, which was illustrated by a series of lantern-slides of photographs taken by him during his recent expedition to Sarawak, selected to illustrate the type of houses common among the settled inland tribes of Borneo and the everyday life of the people. Dr. Haddon said he made no attempt to distinguish between the various tribes, as their mode of life was very similar in its main features. The villages, he observed, were all situated on the banks of rivers or close by; most of the houses were of large size, and might contain from half a dozen to sixty families, in fact, sometimes a village consisted of a single house or of a string of houses placed endwise to each other. A house was built on piles some 10 to 20 feet from the ground. Along the side facing the river was a wide verandah stretching down the whole length of the house, and there many of the domestic industries were carried on, and all the social and public business transacted. The dwelling-rooms of each family opened by a single door on to the verandah. While the common verandah afforded every facility for social intercourse, the privacy of the home was thoroughly respected. In the verandah of nearly every house was at least one trophy of the skulls of enemies, which were supposed to bring good luck and plenteous harvests. Food was occasionally offered to them, and a fire had to be kept burning beneath them, for otherwise the skulls would, it was believed, be uncomfortable and bring misfortunes to the house. The houses were often ornamented with carvings or paintings of a conventional character, the style of decoration varying according to the tribe.

THE CAVE OF PSYCHRO IN CRETE.

IT has been known for some years that a large cave above the village of Psychró, in the Lasithi district of Crete, was a repository of primitive votive objects in bronze, terra-cotta, &c. As this cave is situated in the eastern flank of the mountain which dominates the site of ancient Lyttos, and is the only important cave known in the neighbourhood, it was conjectured that it was the Lyttian grotto connected with the story of the infancy of Zeus in the legend, whose earliest version is preserved by Hesiod. A thorough exploration of it, undertaken in May and June of the current year by Mr. D. G. Hogarth on behalf of the British School at Athens, aided by the Cretan Exploration Fund, has served fully to confirm this view. The cave is double. On the north is a shallow grotto, the upper part of which was cumbered with immense fallen fragments of the roof. The lower part contained deep black earth, partly ransacked by previous diggers. This was thoroughly dug out this year, and when the great blocks had been broken up with blasting powder and removed the deposit on the higher slope was also searched. The result was the discovery of a rude altar in the middle of the grotto, surrounded by many strata of ashes, pottery and other refuse, among which many votive objects in bronze, terra-cotta, iron and bone were found, together with fragments of some thirty libation tables in stone, and an immense number of earthenware cups used for depositing offerings. The lowest part of the upper grotto was found to be enclosed by a wall partly of rude cyclopean character, and partly rock-cut; and within this Temenos the untouched strata of deposit ranged from the early Mycenæan age up to the geometric period of the ninth century B.C. or thereabout. Only very slight traces were found of later offerings. The earliest votive stratum belongs to the latest period of the pre-Mycenæan age, that marked by the transition between the "Kamáraes" fabric of pottery and the earliest Mycenæan lustre-painted ware. But below all is a thick bed of yellow clay, containing scraps of primitive hand-burnished black and brown pottery, mixed with bones of animals. This bed seems to be water-laid, and to be prior to the use of the cave as a sanctuary. Probably, when it was in process of formation, the cave was still a "Katâvothron" of the lake which once occupied the closed Lasithi basin; but before the Mycenæan period the present outlet had opened, and the plain was dry. The southern or lower grotto falls steeply for some 200 feet to a subterranean pool, out of which rises a forest of stalactite pillars. Traces of a rock-cut stairway remain. Much earth had been thrown down by the diggers of the upper grotto, and this was found full of small bronze objects. But chance revealed a more fruitful field, namely, the vertical chinks in the lowest stalactite pillars, a great many of which were found still to contain toy double-axes, knife-blades, needles and other objects in bronze, placed there by dedicators, as in niches. The mud also at the edge of the subterranean pool was rich in similar things, and in statuettes of two types, male and female, and engraved gems. These had probably been washed out of the niches. The knife-blades and simulacra of weapons are probably the offerings of men; the needles and depilatory tweezers of women. The frequent occurrence of the double-axe, not only in bronze, but moulded or painted on pottery, found in the cave leaves no doubt that its patron god was the "Carian" Zeus of Labranda, or the Labyrinth, with whom perhaps his mother, the Nature goddess, was associated, and the statuettes probably represent the two deities. Here was the primitive scene of their legend, afterwards transferred in classical times to a cave on Mount Ida.

SILCHESTER EXCAVATION.

A REPORT of the committee, consisting of Mr. A. J. Evans, M.A., F.S.A. (chairman), Mr. J. L. Myres, M.A., F.S.A. (secretary), and Mr. E. W. Brabrook, C.B., F.S.A., appointed to co-operate with the Silchester Excavation Fund committee in their excavations, was read at the meeting of the British Association. The excavations at Silchester in 1899 were begun on May 5, and continued, with the usual break during the harvest, until November 16. The examination of the south-west quarter of the town having been completed in 1898, it was resolved to continue the excavation of the northern half of the site. To suit the convenience of the tenant, the operations of 1899 were restricted to the insula (XXI.) east of insula I. (which was excavated in 1890-91), and to another insula (XXII.) north of XXI., extending nearly as far as the town wall. The total area examined was about 5½ acres.

Insula XXI. appears to have been enclosed by walls on all four sides. In addition to two houses occupying the northern corners, it had on its eastern side a large house of the court-yard type, with another small house to the south of it. At the south-east angle of the insula was situated an oblong chamber with an apsidal end, perhaps the meeting-room of some trade guild. Other traces of buildings were found along the south side. The south-west angle unfortunately underlies the modern roadway through the city, and could only partly be examined. The western side contained two small square structures. With regard to the houses, that at the north-west corner was discovered in 1864, by the Rev. J. G. Joyce, who communicated an account of it to *Archæologia*. It was, however, only partly excavated by him, and additional chambers have now been found on the south and east. The north-east house is one of the corridor type that has become a courtyard house by later additions. In one of the added rooms was a hypocaust of peculiar plan. The large house on the east side is of interest from the several changes it has undergone, as well as on account of the traces of a series of mosaic pavements of simple character. The small house to the south is remarkable for the number of pits and wells found beneath it. From these were extracted several whole vases, some of an early type and excellent design.

Insula XXII., though equal in size to the other, contained a large amount of open ground in the centre and north-west. As there were no signs of a street on its eastern side, the portion excavated may form part of a larger insula. Near the south-west angle was a good-sized house of the corridor type, with a large chamber at one end terminating in an apse, which had a hypocaust beneath it. A square chamber of some size which had been added on one side has foundations of huge blocks of ironstone, and the same material has been used in what appears to have been a reconstruction of the western part of the house. Besides this house, portions of three others were found. Two of these were of very little interest. The remains of the third include a square block subdivided into two chambers of unequal size, with an apse attached to one side. All these had been warmed by hypocausts.

As usual, a number of wells were met with, lined with wooden framing towards the bottom. No architectural remains of any importance were met with, save a piece of coping, part of a fluted Purbeck marble pilaster, and a fragment of a white marble slab. The finds in bronze, iron, glass and bone were as numerous as usual, but do not call for special notice. From the pits examined an exceptionally large number of entire vessels of pottery were recovered, the total being about eighty. They include several pseudo-Samian vases of unusual quality, an inscribed drinking cup of Castor ware, some large vessels of the coarse ware which is so seldom found entire, &c. The coins found were not very numerous.

The statement of accounts for the year 1899 shows a total expenditure of 515*l.* 0*s.* 7*d.* It is proposed, during the current year, to excavate the large area north of insula I. and IX., which extends up to the north gate.

TESSERÆ.

Roman Itineraries.

AS early as the time of Polybius the Romans had laid down mile-stones from the Rhone to the Pyrenees, and Strabo says that the great Egnatian road from Apollonia on the Adriatic to the Hebrus was similarly marked by a column at every eight stadia, or Roman mile. Agrippa, among other ornaments of the Roman capital, designed a noble geographical monument in a representation of the whole world on a portico, a design which was completed by Octavia and her imperial brother in the Octavian portico. Even the provincial city of Augustodunum (Autun) had porticoes of the same kind, where maps of every part of the known world with all the names were exhibited to the youth of Gallia. Now if any period were to be selected at which it was probable that the grand work of measuring all the roads in the empire would be undertaken, it would be the moment when the victories of Cæsar in Greece, Egypt, Asia, Africa and Spain had at last consolidated the Roman conquests; and he who conferred on his country the great blessing of a well-constituted calendar would naturally direct his mind to the scarcely less important object of a general survey of the empire. But we are not left to conjecture. Æthicus (a geographical writer of uncertain date, but not later than the fourth century, if it be true that St. Jerome translated his "Cosmographia" from Greek into Latin) states in as many words that Julius Cæsar, the author of the bissextile year, ordered a general survey of the empire under a decree of the senate. This was undertaken in three parts, he tells us, the east by Zenodoxus, the north by Theodotus, the south by Polycleitus; they began their labours in B.C. 44, the year in which Julius Cæsar and M. Antonius were consuls, and finished them respectively in B.C. 30, 24 and 19, when Augustus, now sole master of the Roman world, gave the sanction of the legislature to the results by a second decree of the senate. This passage of Æthicus, which certainly bears on the face of it no evidence of forgery or fraud, will well account for the various names prefixed, as above stated, to the MSS. of the "Itinerary," and it is not impossible that Æthicus himself may have been the editor of the work in the form in which it has come down to us. The "Itinerary" has been found forming part of the same MS. with his "Cosmographia," and indeed even the authorship of the work has been assigned to Æthicus by more than one writer of the Middle Ages. That the "Itinerary," supposing it to be founded originally upon the above-mentioned public documents, afterwards received many additions and modifications cannot and need not be disputed. The roads of Britain could not have been all added until the time of Severus, whose vallum, or great wall of protection against the Picts (erected A.D. 209), is more than once mentioned.

Organs in Churches.

The period when the organ was introduced into the churches of western Europe is very uncertain. Pope Vitalian is supposed to have been the first to admit the instrument about the year 670; but the earliest account to be at all relied on of the introduction of this instrument in the west is that about the year 755 the Greek emperor Copronymus sent one as a present to Pepin, king of France. In the time of Charlemagne, however, organs became common in Europe. That prince had one built at Aix-la-Chapelle in 812 on a Greek model, which the learned Benedictine, Bedos de Celles, in his vast but useful and excellent work, "L'Art du Facteur des Orgues (1766)," considers to have been the first that was furnished with bellows without the use of water. Before the tenth century organs were not only common in England, but exceeded both in size and compass those of the Continent. St. Dunstan gave one to the abbey of Malmesbury in the reign of Edgar. Elfeg, bishop of Winchester, obtained one for his cathedral in 951, which was the largest then known. This is described in eight latin verses by Wolstan, the learned monk of Winchester, in the tenth century, of which Mason, the poet, gives the following translation:—"Twelve pair of bellows, rang'd in stated row, are joined above, and fourteen more below. These the full force of seventy men require, who ceaseless toil, and plenteously perspire: each aiding each, till all the wind be prest in the close confines of th' incumbent chest, on which four hundred pipes in order rise, to bellow forth that blast the chest supplies." The translator adds:—"We are not, I think, to imagine that these stout bellows blowers kept their bellows in action all the time the organist was playing. I rather think that his performance did not commence till they had filled the chest completely with wind, which he was afterwards to expend by due degrees as he found occasion." The organ was at first very rude in its construction and extremely limited in its means. The keys were 4 or 5 inches broad, and must have been struck by the clenched hand in the manner of the carillons; the pipes were of brass, harsh in sound, and the compass did not exceed a dozen or fifteen notes in the twelfth century, and to accompany the plain chant no more were required. About that time half notes were introduced at Venice, where also the important addition of pedals, or foot-keys, was first made in 1470 by Bernhard, a German, to whose countrymen we owe many improvements of the instrument; though in excellence of finish they have been surpassed by our English builders.

The Popular Art of the Renaissance.

After the revival of art public taste demanded that ornament, chiefly of the same element, should enter into every domestic object to a degree that almost obscured its use. Instead of being confined to public edifices and the wealthy classes, it penetrated the most humble households, and was employed on the most common materials. Not only was furniture most elaborately carved and richly painted or gilded, but ordinary domestic utensils were wrought with an attention to ornament which reminds one of the fanciful designs and graceful patterns found in similar objects at Pompeii and Herculaneum. Paintings formed a portion of marriage dowries. The bride's effects were given in chests decorated to the utmost capacity of the then known art. Saddles, the trappings of horses and armour, were all richly ornamented. Associated with artists were those trades in which ornament was conspicuously intermixed. In fact, workers in metal, carvers, gilders, saddlers and other mechanics were considered as on a level with artists. This did not so much elevate manufacture as it tended to degrade art. There existed, however, a reason for this association in the congeniality of labours. Painting was still secondary, not having so speedily and wholly emancipated itself from traditionary types as sculpture and architecture. Besides, the artist was necessary to design. Even Leonardo da Vinci condescended to paint a buckler. Some of the greatest names in art were those that arose from the conditions of artisans, their genius being developed by the demand for beauty and skill in ornamentation. This exigence of the public was beneficial to the workman. It prevented him, as in modern manufacture, from degenerating into a mere machine. Both thought and imagination were kept alive in the creation of new forms to keep pace with the public taste. He was interested in his work as an evidence of his own talent, and not the nice adjustment of a steam-engine or the servile copying of a set pattern. Head and hands were equally employed; consequently, not only was Mediæval labour more healthful than modern, but it avoided all sameness and mechanical precision. It is true that machinery is a better workman for all purposes connected with mere utility. But when it approaches the domain of beauty or suggestiveness, its clumsiness becomes painfully apparent.

Mercantile Art.

Nothing is more mischievous to art than, from erroneous kindness or taste, buying the works of those who take to it from other motives than sincere love. Every other occupation has its basis in utility. Inferiority in the quality of manufacture does not diminish materially the value of an article in point of use, provided that object is kept strictly in view. Consequently we get what we pay for, so far as use is concerned, but not perhaps in regard to excellence of workmanship. Disappointment in this respect does not mislead the mind or corrupt the heart; it simply offends our taste in its most superficial sense. Far otherwise is it, however, with art when we derive it from impure or insincere sources. Its mission is too sacred to be the sport of triflers or tampered with by ignorance. Many self-styled artists are confirmed in their mistaken profession, to the detriment of art and corruption of good taste, simply because their friends from equally mistaken motives encourage them in a career for which nature has not qualified them, to the loss also of some industry to which they are especially adapted. Hence too much caution cannot be used in purchases. Temporary kindness to the individual may prove a permanent injury to the public. Art properly knows neither nation nor person. Like beauty, it is universal with principles derived not from the institutions of men, but the works of nature. Criticism therefore, be it expressed verbally or by purchase, should look exclusively to art and ignore the artist. By this means only can we keep taste unsullied by motives foreign to its abstract rules. Yet the eye should not accustom itself too freely to seek for defects in preference to merits. Better for the soul's good to perceive only beauties than to detect solely the bad The Thebans carried the impersonality of art so far as to fine the artist who made a bad portrait, on the ground presumably of its being doubly libellous. A law good in theory, but in modern times efficacious only through the absolute rejection by the public of every object of art not manifesting sincerity of purpose and progressive excellence.

Aspirations Toward the Beautiful.

Dividing the world of mind into its three most immediately obvious distinctions, we have the pure intellect, taste and the moral sense. Taste must be placed in the middle, because it is just this position which it occupies in the mind. It holds intimate relations with either extreme, but from the moral sense it is separated by so faint a difference that Aristotle has not hesitated to place some of its operations among the virtues themselves. Nevertheless we find the offices of the trio marked with a sufficient distinction. Just as the intellect concerns itself with truth, so taste informs us of the beautiful, while the moral sense is regardful of duty. Of this latter, while conscience teaches the obligation and reason the expediency. Taste contents herself with displaying the charms—waging war upon vice solely on the ground of her deformity, her disproportion, her animosity to the fitting, to the appropriate, to the harmonious—in a word, to beauty. An immortal instinct, deep within the spirit of man, is thus plainly a sense of the beautiful. This it is which administers to his delight in the manifold forms, and sounds, and odours, and sentiments amid which he exists. But that delight is not sufficient. There is something in the distance which he has been unable to attain. We have still a thirst unquenchable, to allay which he has not shown us the crystal springs. This thirst belongs to the immortality of man. It is at once a consequence and an indication of his perennial existence. It is the desire of the moth for the star. It is no mere appreciation of the beauty before us, but a wild effort to reach the beauty above inspired by an ecstatic prescience of the glories beyond the grave; we struggle, by multiform combinations among the things and thoughts of time, to attain a portion of that loveliness whose very elements, perhaps, appertain to eternity alone. The struggle to apprehend the supernal loveliness—this struggle on the part of souls fittingly constituted, has given to the world all that which it (the world) has ever been enabled at once to understand and to feel as poetic. The poetic sentiment, of course, may develop itself in various modes—in painting, in sculpture, in architecture, in the dance, very especially in music—and very peculiarly and with a wide field in the composition of the landscape garden.

GENERAL.

Mr. J. W. Thomas, in a paper read before the British Association, maintained that ventilators of the ordinary type ought to be sheltered from the wind as much as possible, instead of being exposed to it, the all-important element of outside pressure on the ventilating power of a chimney being usually overlooked.

A Sample Depôt for the exhibition of German goods is about to be erected at Sydney. The cost is estimated at 7*l*. 10*s*. per square metre. Similar depôts are to be established elsewhere in Australia and in other British colonies.

The Secretary of the Glasgow Institute of Architects has informed the Corporation that the Royal Institute of British Architects intend to hold their annual meeting in Glasgow in October 1901, and asking whether the magistrates might be disposed to offer the Association some official recognition. The communication was remitted to the magistrates.

The Contract for the Royal Victoria Hospital, Belfast, has been entrusted to Messrs. M'Loughlin & Harvey, of that city.

The Industrial Museum, Nuremberg, during the past year has cost 10,169*l*. An addition for the exhibition of machinery is in course of erection at a cost of 17,500*l*.

The Works Committee of the Metropolitan Asylums Board submitted at the last meeting, as a matter of urgency, a detailed estimate showing the probable cost (22,500*l*.) of the seaside homes for children at Rustington, near Littlehampton. The estimate was approved and adopted, and it was ordered that it be forwarded to the Local Government Board, with a request that they would issue an order authorising the expenditure of 22,500*l*., and the raising of the amount on loan. The plans for the erection of the homes were adopted by the managers on July 28 last, and are now under the consideration of the Local Government Board.

Lord Wantage has purchased the Vale of White Horse Ironworks, which have been carried on for many years in Wantage. The works form the staple industry of the town.

The Late Thomas Faed, R.A, left property which has been valued for probate at 56,199*l*. 19*s*. 7*d*.

A Roman Water-pipe about 5 feet 3 inches in length has been unearthed in Eastgate Street, Chester, and removed to the Grosvenor Museum. Another part of the same pipe was discovered in October last. The inscription records that the pipe was laid when C. J. Agricola ruled in Britain.

Mr. Robert Gourlay, of the Bank of Scotland, has been nominated as Dean of Guild for Glasgow in succession to Sir James Bell. The appointment will be formally made at the meeting of the house next month.

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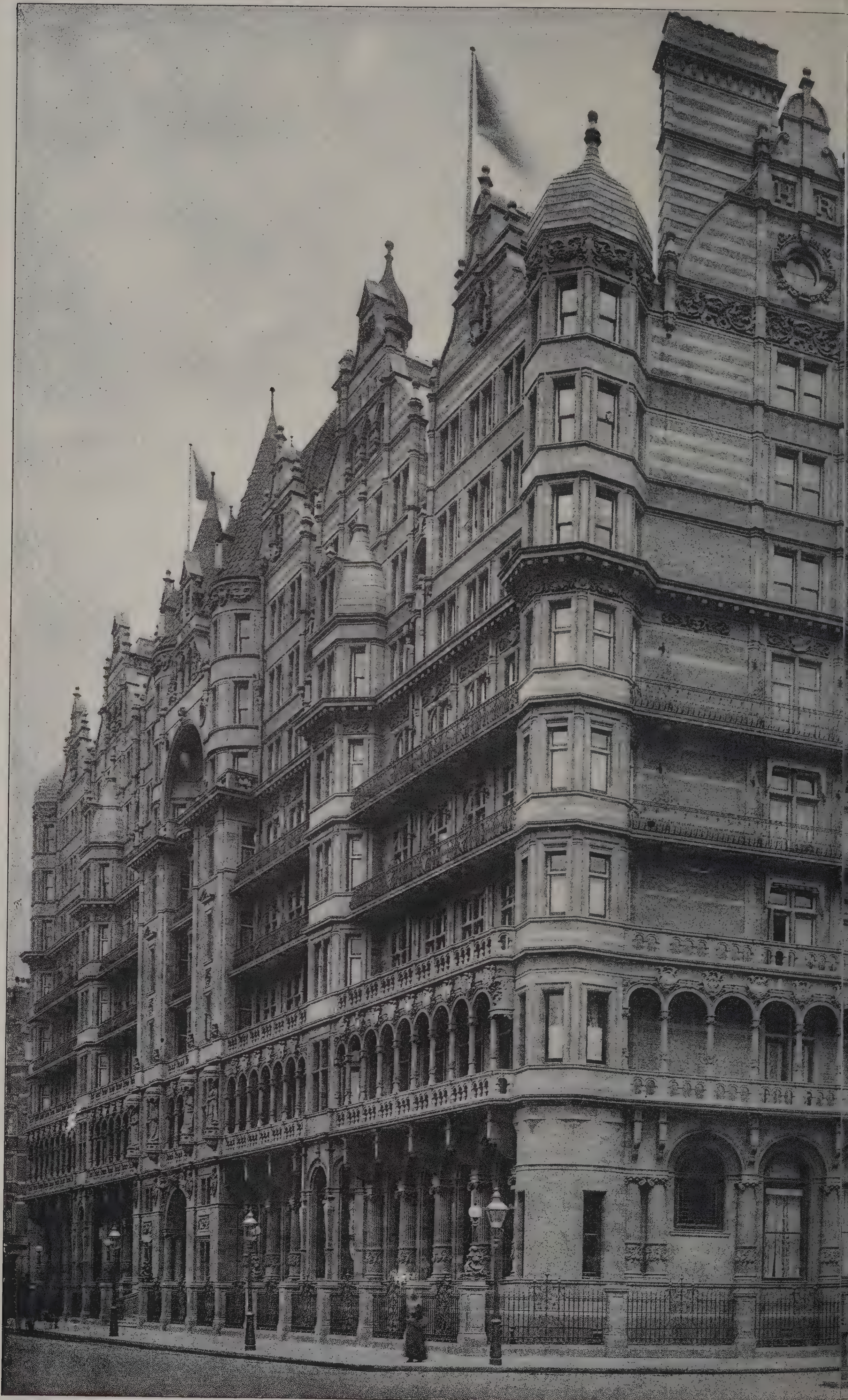
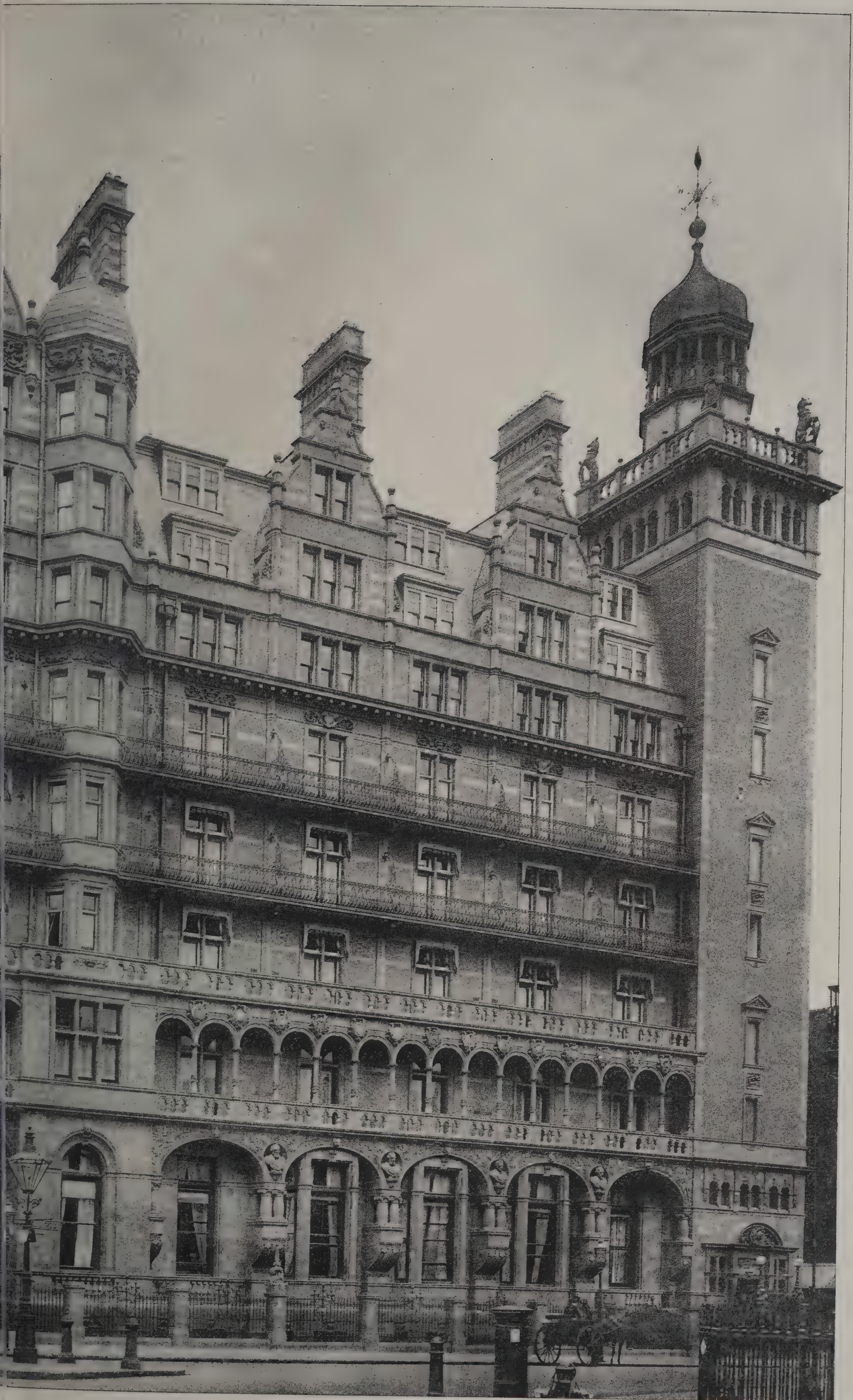


PHOTOGRAPHED BY JOHN H. AVERY & Cº 164, STRAND, W.C.

HOTEL RUSSELL, RUSSELL SQUARE: V

C. F. DL

Sept 14th 1900



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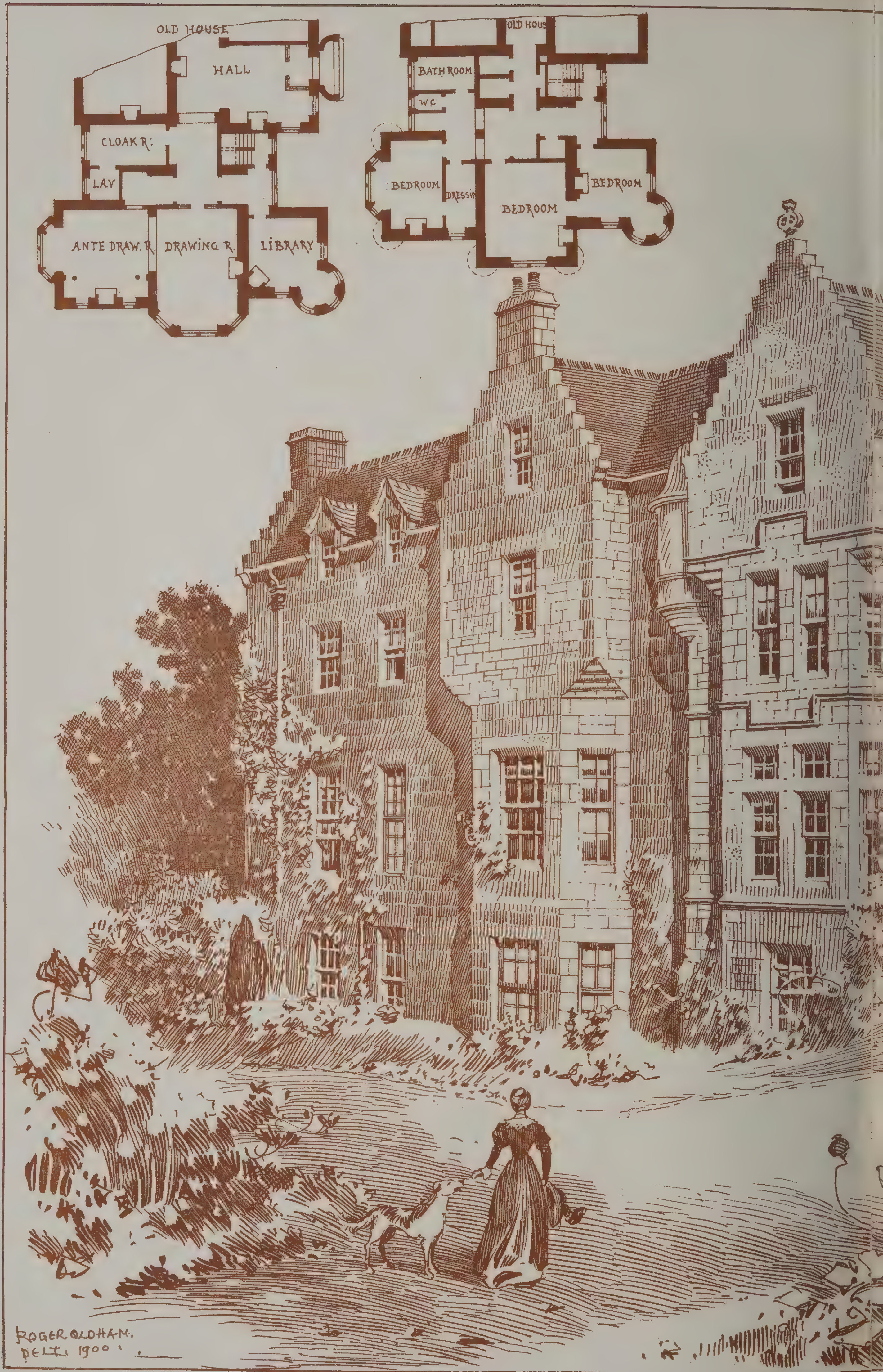

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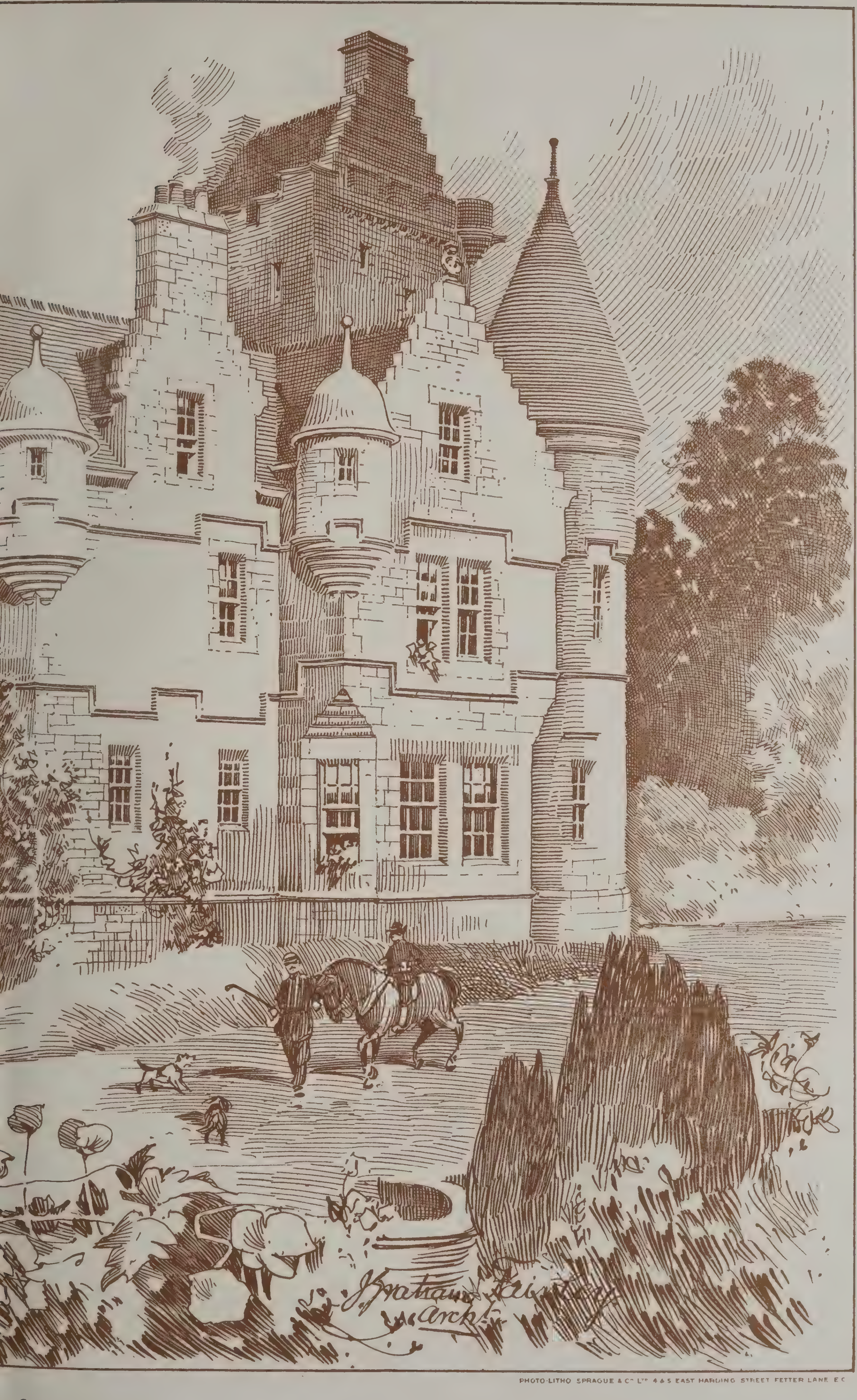

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D Country House.

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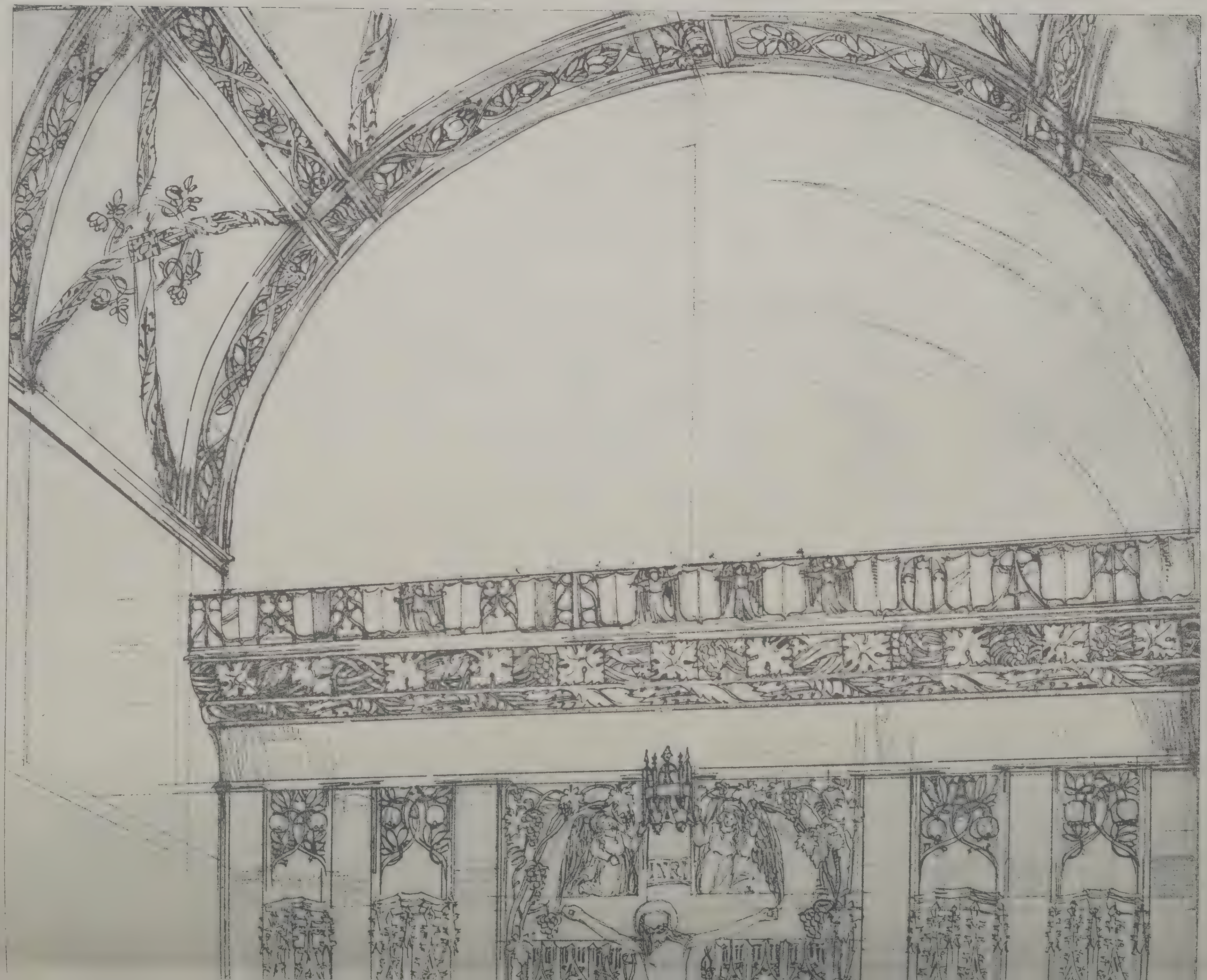
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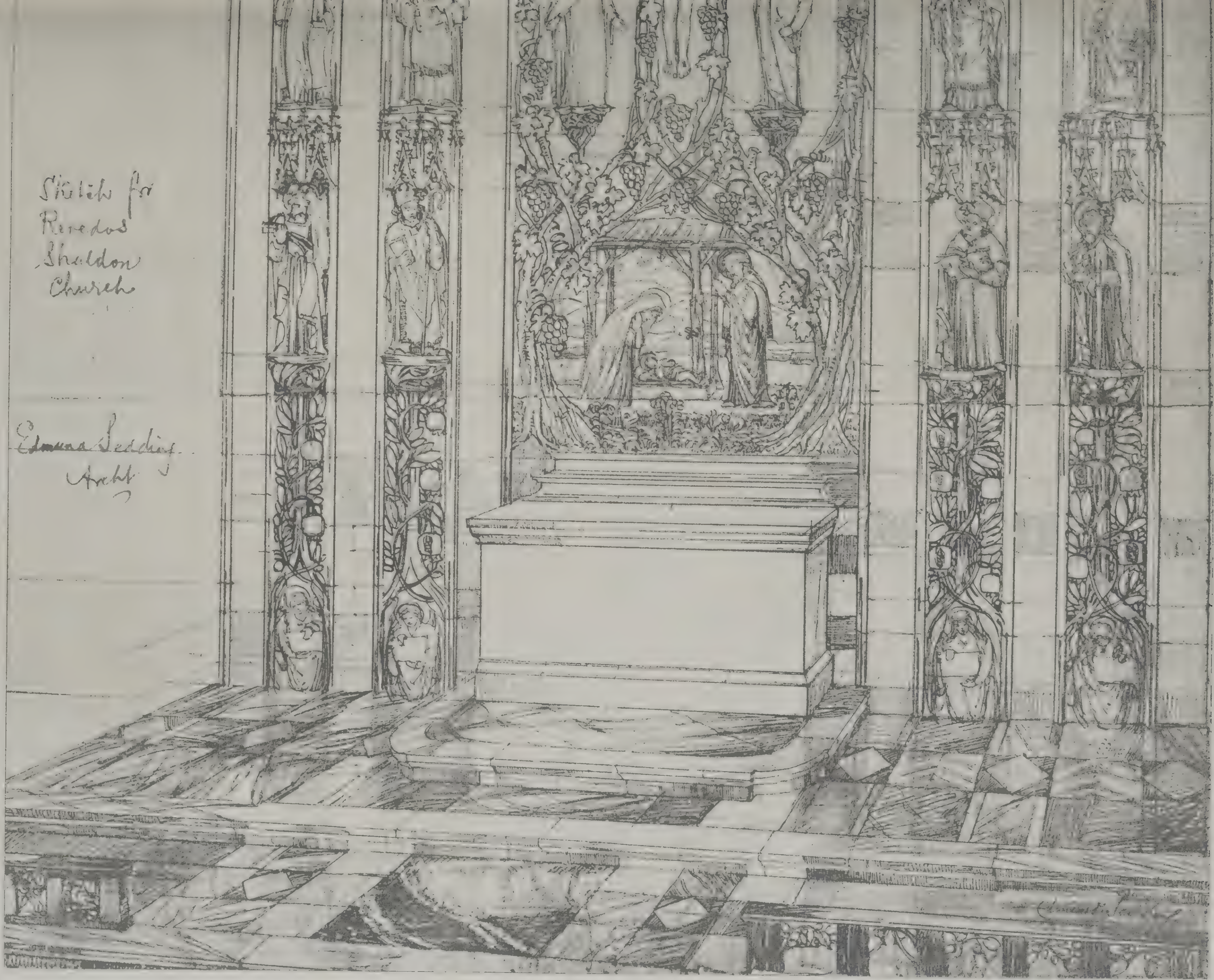

Sketch for
Reredos
Shaldon
Church

Edmund Sedding
Archt

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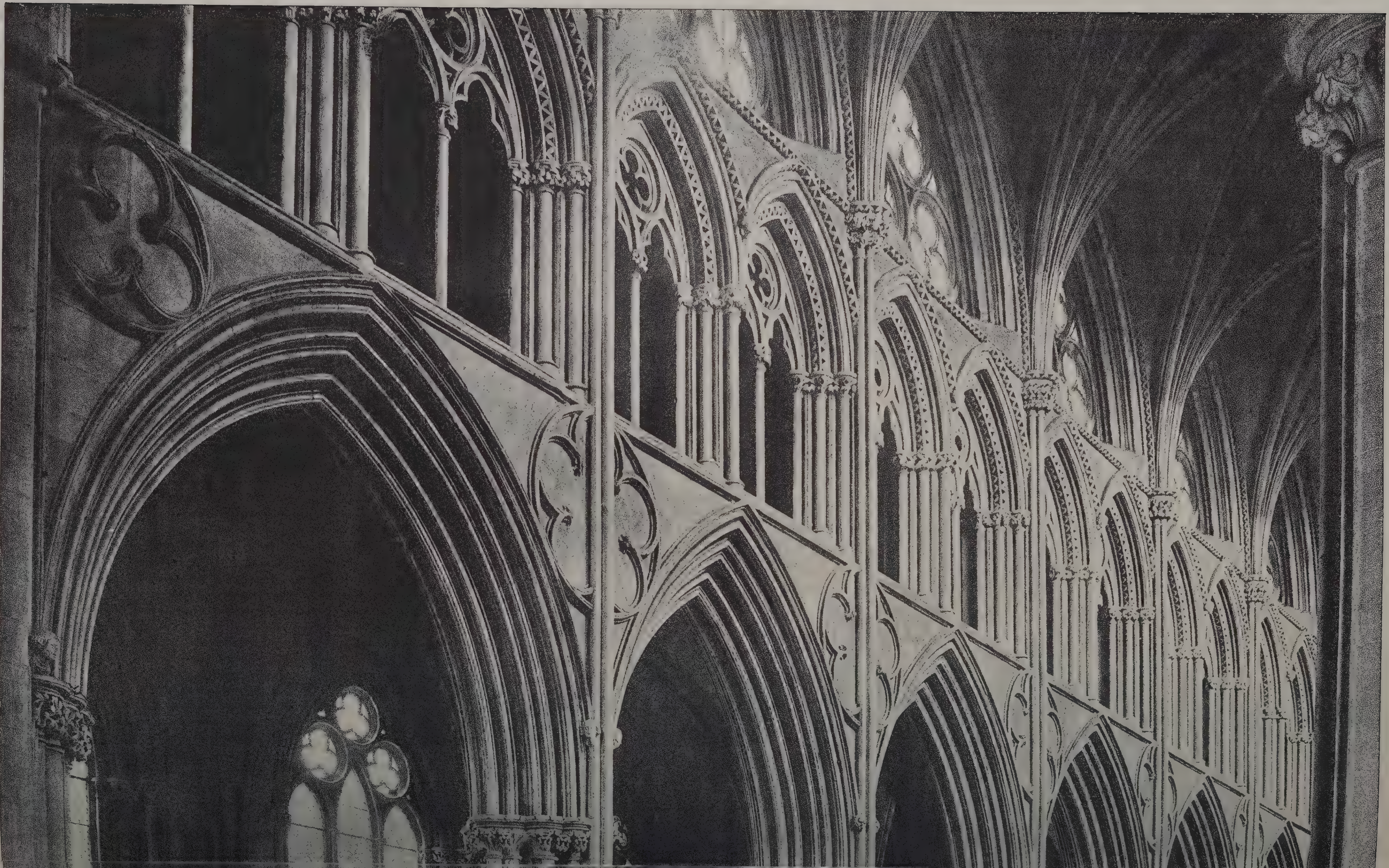

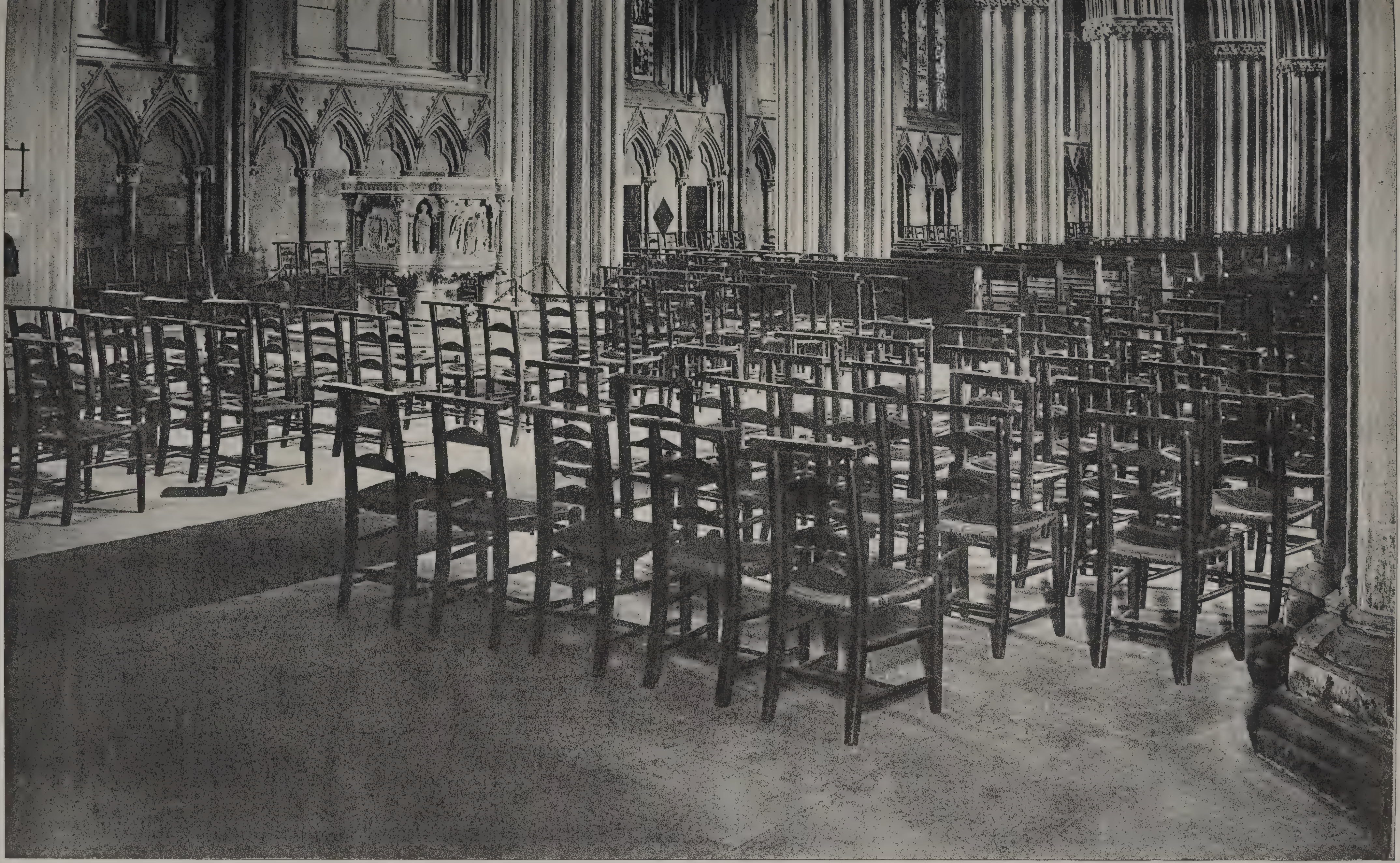

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CATHEDRAL SERIES. No. 297.—LICHFIELD: THE NORTH SIDE OF NAVE, SHOWING TRIFORIUM ARCHES.

The Architect.

THE WEEK.

It was not considered desirable to conceal any part of the Paris Opera House while the Exhibition was open, and in consequence the erection of the memorial of Charles Garnier has had to be delayed. As the bust, pedestal and other parts have been executed, when the time arrives for placing them in their positions there will probably be some surprise at the expedition with which the work will be completed. It might be fated that there should be a connection between the Opera House and Exhibitions. When it was proposed to hold one in 1867 it was resolved to open the Opera House at the same time, and immediately there was an outcry about the dilatory execution of the works under Charles Garnier. His defence is worth recalling, for it supplied some information about the time occupied in the erection of some of the principal buildings of Paris:—"The Panthéon, the total contents of the masonry of which is only 290,000 metres, being less than half of that of the Opera House, was," he wrote, "built in twenty-six years. The Bourse, in which the cubical contents are but 106,000 metres, was constructed in nineteen years. To simplify the comparison I will only remark that if the buildings I have just named had been constructed with the rapidity of the works actually executed at the Opera House, they would have been completed as follows:—The Panthéon, in 30 months, instead of 26 years; the Bourse, in 18 months, instead of 19 years; the Madeleine, in 22 months, instead of 74 years; the church of the Sorbonne, in 13 months, instead of 14 years; the Conseil d'Etat, in 28 months, instead of 25 years. The new Louvre alone has been erected with greater rapidity. But it must not be forgotten that the larger portion of its internal arrangements have been postponed; that much yet remains to be done, and that one chief apartment, the Salle des Etats, is only adorned with models on painted calico and in carton-pierre." To the allegation that the works of the neighbouring Grand Hotel were evidence against him, M. Garnier explained that the cubic contents of the walling of the Grand Hotel was 32,000 metres, in brick or rubble-work for the most part. This walling had been executed in sixteen months, while at the Opera House no less than 60,000 cubic metres were executed in twenty months. Of stone walling, properly so called, they laid at the Grand Hotel 11,000 metres in fifteen months, while at the Opera House in seventeen months the quantity was 33,000 metres. It would have been possible to perform more work if funds were forthcoming, but the exchequer of the Empire was not able to afford larger sums towards the erection of what will always be considered the most characteristic of imperial buildings. The Opera House was consequently not completed when the Exhibition of 1867 (which was arranged in divisions corresponding with an oval plan) was opened, and the first use made of it was as a granary and hospital during the siege of Paris.

Cement is largely used in municipal works in America, for, like the ancient Romans, the people have a liking for a variety of compounds which could not be produced without its aid. It is difficult, however, to test cements, for the smaller municipalities cannot undertake to keep up laboratories, and to send specimens to experts is not satisfactory, for owing to the distance which must often be traversed time is lost and works are delayed. There is so much need of tests, the State engineer of New York has offered to have the work done in the laboratory belonging to his department At the late convention of the American Society of Municipal Improvements it was suggested that all cements should be tested near their place of manufacture, if possible, in an official laboratory, and that the packages should be sealed and marked as to the quality. Purchasers could then buy cement with a clear understanding as to its quality, and the large amount now expended in feeble and hurried attempts to test cement used in municipal work could be saved. A laboratory devoted to the interests of the consumer would be able to indicate the kinds of cement needed for any particular purpose; whether a cement should be a quick or slow-setting, capable of slowly increasing in strength or of rapidly acquiring sufficient strength to make its use desirable for grouting the joints of pavements, &c. It was considered that such testing laboratories could be supported by a number of municipalities combining for the purpose, or by the State in which the manufactories are located. In the latter case the expense of such testing could be covered by a sufficient fee exacted from the makers, and all purchasers alike would reap the benefits derived from the certainty of quality. The suggestion is applicable to cement of American manufacture. A large quantity has to be imported from Europe to the United States, and the foreign productions are not always of the strength that is desirable. The difficulty of obtaining cement which will correspond with the description given of it is not confined to America. In England, where the best cements in the world are produced, it is also possible to obtain an inexhaustible supply of inferior stuff.

From information given to the American Institute of Architects by M. Okamoto, there is a society of Japanese architects composed of two classes of members, viz. full members, who are architects educated in the modern sense, and about sixty in number, while the second class consists of sub-members who are connected with buildings, such as contractors, uneducated architects, superintendents and foremen. There are between seven and eight hundred in the second class. The Journal of the Society consists of 159 numbers. The illustrations betray the influence of European and American works. The design for the Imperial palace by M. Katayama, an honorary member of the American Institute of Architects, shows a modern French building. It is to have a steel skeleton of American construction. If any workmen should go from Chicago they will be amazed at the wages paid to the Japanese. Bricklayers and carpenters are paid at the rate of 50 cents a day, and labourers receive 30 cents.

A district meeting of members of the Association of Municipal and County Engineers was held on Friday last at Tonbridge, when much information was elicited. Mr. W. L. Bradley said that for the repairs of main roads in the town Penlee stone had been used, but owing to its slipperiness in winter the Urban Council decided to give a trial to Quenast granite. Mr. J. M. Knight said he found in Mile End that Guernsey stone was one-third better than Quenast. Mr. W. Brooke, of Strood, maintained that Penlee was the best wearing stone for roads. Mr. J. P. Barber, of Islington, agreed about the difference in endurance between Penlee and Quenast, but from his experience they were about alike in slippery nature. If the debate had continued it would probably be found there was no likelihood of agreement on a subject that at first sight appeared to be simple. The question also arose about the maintenance of main roads in Kent. The cost varied greatly. In 1892 it was, taking the county as a whole, 143*l.* a mile; in 1897-98 the amount fell to 111*l.* a mile, and in 1898-99 it rose to 134*l.* a mile. Quartzite was considered to be the most suitable material for making up roads on which there was heavy traffic.

Members of American universities are not content with conducting explorations in Greece and Assyria. Archæological students from the North-Western University have experimented in New Mexico with success. In Pajarsto Cañon, between Bland and Espanola, they have discovered remains of a building of a remarkable class, which would suggest that tenement houses, or it may be monasteries, existed there at an unknown date. The building measures 450 feet by 560 feet, and is supposed to have contained 150 rooms. The walls are still in good condition. The building had two if not three storeys. The rooms measure 9 feet and 12 feet, and the height was likely to be 10 feet. The floors were of cement. The building was used for other purposes besides residence, for remains of a furnace, large pieces of slag, copper ore, polished stones, stone axes, &c., were met with, and which were sent to the University collection at Evanston, Ill. Ruins of similar buildings exist in the district, but only this one was explored.

POMPEII AS A WATERING-PLACE.

THOSE who have to seek furnished houses in watering-places for holiday times must have observed that of late years there is an increasing demand for those which have many rooms. If the agents are to be believed, in some towns by the sea the larger houses have to be engaged months before the season commences. Boarding-schools are much in request. Owners of houses which were supposed to be exclusive are tempted by the offer of liberal payment, and deliver up their treasures for the temporary enjoyment of strangers who, under other conditions, would be refused admission as visitors. In these arrangements we have signs of progress. People are realising it is an absurdity to describe as holidays days and nights in humble and unhealthy dwellings, which are without any of the comforts demanded by their servants in London and elsewhere. For a day or two the vulgar furniture, and still more vulgar "ornaments," of the rooms in the majority of seaside dwellings may be endured, as if removal to such quarters was no more than a joke; but one is soon awakened to the realities of things, and finds that the anticipated holidays are destined to be a penitential term, with unceasing tests of the sufferer's patience. It is no wonder, therefore, so many people are glad to return to town as the lesser of two evils, or leave the hired quarters to children and servants and seek some compensation abroad for their disappointments and discomforts. It would be interesting to learn what percentage of the unexpected influx of visitors to the Paris Exhibition within the last few weeks has been caused by experience of the shortcomings of seaside houses.

It must, however, be admitted that the shortcomings of seaside dwellings, as compared with those in inland towns, are of an ancient date. If any of the ordinary Roman citizens ventured to seek a few weeks' repose in Pompeii, we imagine they were compelled to endure privations exceeding any encountered by the humblest shopkeeper from Whitechapel or Camberwell, in Margate or Brighton. Whether lodgings were to be obtained on conditions resembling those which prevail in English watering-places is not to be ascertained by any evidence that would be accepted in Courts. But when we find that many of the inhabitants of the city were as anxious to make money quickly as if they knew the risk of their position, it is not unreasonable to suppose houses would occasionally be shared with strangers who were regardless of restricted space of nights when they were able to enjoy sea and sky during the day and evening.

It must also be allowed that much of what remains of Pompeian construction is of no better quality in the eyes of an architect than the new quarters which are so expeditiously run up in many of our seaside towns. A jerry-builder would not be long in the sepulchral city without discovering that the art of deceiving the unwary by concealing the true character of brickwork and masonry did not arise in English towns. If the city had not been covered by the stones and cinders which fell upon it, it would not be possible for later generations to do more than speculate about its site. The defects of the materials were shrouded, and walls which, like those in suburban terraces, could not have endured for more than a few years, were preserved to become the most remarkable of revelations about ancient domestic architecture. The small watering place has gained immortality, while cities of more architectural value have passed into oblivion. As Macaulay, in apostrophising Pompeii, said:—

> Sad city, raise thy drooping head,
> And share the honours of the glorious dead.
> Had Fate reprieved thee till the frozen North
> Poured in wild swarms its hoarded millions forth,
> Till blazing cities marked where Albion trod,
> Or Europe quaked beneath "the scourge of God,"
> No lasting wreath had graced thy funeral pall,
> No fame redeemed the horrors of thy fall.
> Now shall thy deathless memory live entwined
> With all that conquers, rules, or charms the mind.
> Each lofty thought of poet or of sage,
> Each grace of Virgil's lyre or Tully's page
> Like theirs whose genius consecrates thy tomb,
> Thy fame shall snatch from time a greener bloom,
> Shall spread where'er the muse has reared her throne,
> And live renowned in accents yet unknown.

The interest which must always be attached to Pompeii from its tragic fate has made men imagine that its buildings were magnificent. A Roman city in which the central opening of the principal gate was only about 14 feet could not deserve that title, for the degree of importance which expressed a city's rank in the Republic or Empire could be inferred from the character of the entrances. Nor were they enhanced in value when, as at Pompeii, they were coated with stucco. The streets were also narrow, and the paving was so irregular, the living rooms which Roman gentlemen occupied were obliged to be arranged in the back part of houses. In modern times the views from windows opening on streets appear to have extraordinary interest for visitors to the seaside. If, for example, an order were made that all windows looking on the Digue in Ostend were to be obscured the prosperity of the town would be at an end. People would not come from so many parts of Europe every year to witness the moving spectacle. It is no longer possible to speak with certainty about the Pompeian houses which were nearest to the Bay of Naples, but with those in the town there was, so far as is known, no outlook on the streets. If it were otherwise, owing to the narrowness of the streets there would be no difficulty in observing what took place in opposite houses. The Roman, when he returned from the Forum or other public place, considered privacy to be his privilege, and the windows of his house, which were not numerous, opened on his court, or atrium. By the arrangement more shade was obtainable. We are unable to understand the exact relations between landlords and tenants in Pompeii, but it is not impossible that in it, as in various continental cities to-day, shopkeepers built some of the blocks in the way that would be most profitable to themselves. They would be economical of the space required to display their wares, and they might contrive to have two or three shops on a plot, while allowing sufficient space for the dwelling required by a Roman grandee who might be no more than a tenant.

For what most strikes the visitor, however short may be his stay, is the rigid economy which regulated the laying-out of the ground and the very limited area allowed for private houses in Pompeii. Great men like Cicero or the Plinys were no doubt able to possess villas which we can assume to have capacious rooms and courts outside the gates, but within the city many of the houses must have corresponded with the modern agent's "bijou bachelor's dwelling" in streets where flats have not appeared, or with some seaside bungalows. The houses, in fact, raise the question, "Of what class were the occupiers?" If a Pompeian directory or official list of inhabitants could be discovered we might with its aid come near a conclusion about how many of the inhabitants were residents and how many occasional visitors. It has been supposed that the residents throughout the year were numerous, and if so they were likely to be men who avoided the civic responsibilities of life or who abandoned them. The climate was enervating, and we cannot imagine a Roman possessing the qualities which enabled his race to control the world, content to settle down in Pompeii, unless, like Mark Antony, he wished to see "Rome in Tiber melt, and the wide arch of the rang'd empire fall." A Roman of any account was expected to have his little senate about him during his working hours. The *atrium* was, according to Vitruvius, an assembly hall which varied in size according to the influence of the owner. There he proposed his laws and administered justice. But in Pompeii the *atrium* is usually so circumscribed it might be only a degenerate survival of the ancient institution. A man would not appear to be deserted and solitary if he used it without a companion. The *triclinia* could only accommodate a few friends, and if they remained until night it would be difficult to "put them up." If there were any children the ordinary Pompeian house does not suggest where they were placed. It is well to remember that the conclusion most favoured is that the majority of Pompeian houses consisted of only a single storey, and there was consequently less opportunity for testing the elasticity of rooms than occurs in English seaside houses. Custom decreed that every respectable Roman house should have a certain number of chambers for prescribed purposes, and it might be possible to shelter children at night in the *lararium* or oratory without offending the household deities; but unless semisacred rooms, or other places intended for show could be utilised for a nursery, the plans of Pompeian houses must puzzle many a British materfamilias.

In describing Pompeian houses it is usual to adopt the Vitruvian standard and allow imagination to create buildings corresponding with it. Apparently Vitruvius was acquainted with cities which bore little or no resemblance to Pompeii, where private buildings especially were as restricted in space as if the city were a financial capital. The Pompeian houses must be judged by a different rule, and for that purpose more knowledge is needed about the character of the inhabitants. The accommodation provided does not correspond with the ideas of Roman life which are generally accepted. Nor will the difficulty be overcome by saying Pompeii was more of a Greek than a Roman city. The care given to decoration would suggest influence that was not altogether Roman. On the other hand, we know that in A.D. 63 almost the whole city was destroyed by an earthquake, and in rebuilding Roman requirements were likely to be recognised.

Whatever is the explanation, it must be evident that the people who enjoyed themselves beside the Bay of Naples in old times, and philosophically submitted to narrow streets and limited air space in dwellings, must have had a different expectation of what life can furnish in the way of enjoyment than those who take their pleasures sadly at English watering-places.

THE PARISH CHURCH, GODALMING.*

In a general way it is admitted that many English churches which are filled at least once a week stand on sites which were used for similar buildings of the same class since the introduction of Christianity in England, and that some of them must contain fragments of masonry which have survived through an indefinite number of years. It is rarely an ordinary parishioner will care for more precision about the history of his parish church. He may have a respect for the past, and would be gratified to be assured that one of the companions of Paulinus made a temporary abode in the parish, but antiquity as a sentiment is very different from antiquity as a science. One involves much labour and the conclusions are doubtful; the other can be turned into a pastime, for churches in the air are as easily constructed as any æriform castles.

The book by Mr. Welman is of a kind which is not often attempted. He takes the parish church of Godalming as it is, and he endeavours to explain how it has acquired its present appearance. To a great extent his work is an endeavour to solve a problem of architectural evolution, and indeed it may be doubted whether his book would have taken its present form if it were undertaken when he was first fascinated by the building. Mr. Welman tells us he is "an old resident in the parish of Godalming, and also, as an architect and a member of the Surrey Archæological Society, has shared, in common with every other parishioner, in the interest with which its parish church is regarded." But with all his interest he was not ambitious to write a book about it, for "the whole of his earlier investigations were made entirely on account of the attraction of the subject, and for the purpose of satisfying himself upon certain statements and theories that had been advanced in regard to the structure."

Mr. Welman has subjected the building to such an analysis as is rarely attempted. Archæologists, and especially architects who have an eye to restoration, believe it is incumbent on them to display their insight by professing to read the history of a building at a glance, but Mr. Welman does not claim to be possessed of so powerful a vision. It is easy to see he depends on slow and patient labour as the most efficacious way of clearing obscurities, although he does not boast of his performances. One instance will suggest that his method, however simple, can lead to discoveries. A wall of the tower was found to have settled, and the cause was supposed to originate in its erection upon a gable of the primitive building. It also followed that the west wall of the tower corresponded with the west end of that church. A gable coping-stone which still exists was relied on as evidence. Mr. Welman was not satisfied, for he could not believe the Normans would have adopted such an arrangement, which imposed a duty on walls for which they were not adapted. First, he came to the conclusion that if the stone to which so much importance was given was the coping of a gable, it must run through the wall and be visible on the other side. That side was, however, not accessible. Fortune sometimes favours inquirers, and what happened in this case is thus described:—

> Some years ago, when the church was being cleaned, an unexpected opportunity offered itself, and I managed to get through a small trap door into the space over the nave ceiling. The trap door is at the extreme western end of the nave, so that the whole length of the roof had to be traversed to reach the tower wall. Having crept through the long avenue of timbers which had the dust of ages lying upon them, as soft as velvet to the touch, I looked long and carefully at the wall for the gable coping-stone. No indication of such a thing was to be seen high or low, but very close up under the tiles of the nave roof in the very rough stonework there appeared the irregular lines, marking the raising of the wall from an old gable. Looking closer, the extreme point showed signs of having been taken down and rebuilt, and there further appeared, very indistinctly, some sign of two round holes having been filled up. These, on full examination, I found to be two circular windows like two eyeholes. They were perfect in shape, and the rough plaster was still upon them. When all this was carefully measured and drawn to scale it appeared that the lines of this rough gable point were some feet higher up than the coping-stone on the other side of the wall; also that the two eyeholes were higher up than the same coping. It appeared also that the *outside* of these two little windows was the eastern or belfry side, and that the *inside* of them was the western or nave side. These two little windows were blocked up nearly 800 years ago. For all that, they let a good deal of light into my mind on the inquiry in hand. First, they indicated that, as their outside face was to the east and their inside to the west, the primitive church which they lighted was on the west side, and not on the east side of this wall. Next, they showed me that the eastern face of the wall, being the outside, was originally open to light and air, and not shut in at this height by a church on the site of the present chancel.

It would consequently appear that the distinguishing between nave and chancel by means of roofs at different levels originated in an early age. Mr. Welman explains the existence of the gable coping by saying there must have been a span roof under it, which covered some apartment running westward. Some may say the eyeholes were ventilators, but they have been too long blocked up to support that theory, although many caretakers in buildings where there are costly ventilators, which are rendered useless by filling them with rags, would take the arrangement as a confirmation of their misdeeds. Mr. Welman believes the two openings were "eathryls," and warrant the belief in the erection of the original Godalming Church between A.D. 1000 and A.D. 1050. The chancel would be Early Norman.

Ralf or Ranulf Flambard, the "Burning Torch," was, it appears, parson of the parish under the Conqueror, but his name is more associated with Durham, of which he became bishop. He was a type of the Norman prelates, and the Saxon chroniclers have drawn his portrait in sombre colours. But he appears, after many misdeeds, to have had a longing for a higher life, and as was usual in those days the change was marked by an eagerness to build. Durham owes much to him, for besides his work in the cathedral he constructed a bridge across the Wear, a large part of the city wall, and Norham Castle, which was to be a protection against the Scots. He may have erected the tower at Godalming, but if he confined his work to it and a chancel, it was not, as Mr. Welman imagines, from a belief that "the old nave was large enough and good enough for its purpose, that of accommodating the conquered and overborne Saxon laity." There were Norman laymen as well as Norman priests, and they would have to kneel in the nave under the same conditions as the natives.

In 1155 Henry II. was able to arrange an exchange of Godalming for a castle and lands at Devizes possessed by the Bishop of Sarum. About that period there were further alterations and additions. Richard de Chiddingfold was appointed vicar in the beginning of the thirteenth century, and in his time "it is therefore probable all the work done in converting the church from a purely Norman structure into one of an Early English character was carried out." Sketches are given to suggest the appearance of the church after its various changes, and Mr. Welman gives good reasons in support of his belief whenever there is a feature that does not seem to be in keeping with the church as it now exists. An effort is made to represent the building as it appeared in each century between the eleventh and the nineteenth. There will, of course, be various opinions about the accuracy of Mr. Welman's conclusions, but there can be no question about the industry which was exercised to arrive at the truth or the modesty with which the author expresses his views. The mode of reasoning adopted to prove that the spire of the thirteenth-century church was of a different character to the spire now to be seen is a good example of the author's method. It may here be mentioned that a sanctus bell was long set up at the base of the spire and was allowed to remain until 1840, when operations were undertaken which changed the character of the church. The restoration of 1879 was, as Mr. Welman says, "largely an undoing of the work of 1840," but in the course of so many changes and counterchanges it is surprising that relics should remain which connect Saxon times with our own.

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* *The Parish and Church of Godalming.* By S. Welman, architect. (London: Elliot Stock.)

To Mr. Welman the stones of the church are of more interest than the men who worshipped in it. It cannot be said, however, many distinguished individuals were to be found among them. They appear more effective as a mass than when considered singly. Mr. Welman says:—"This was the church to which came the Elliots, the Walters, the Dolliffes, the Barkers, the Monroes and the Townsends of Busbridge; the Tichbourns, Gills and Franklands of Easking Park; the Platts, Oglethorpes, Hodges and Gadbolds of Westbrook, including the famous old general." Every reader of Boswell's book will remember that Oglethorpe was one of the few men who were not afraid to stand up against Johnson, but he befriended the moralist when the world neglected him. With him courage was strong. When he served under Prince Eugène, one day at dinner a German prince, in taking up a glass of wine, contrived to dash Oglethorpe's face with some of it. It would be contrary to etiquette to challenge so distinguished an offender, and he dare not pass over so public an insult. He therefore appeared to treat it as a jest, saying, "That is a good joke, but we do it much better in England," and at the same time flung a whole glassful of wine into the prince's face. Oglethorpe was not a Surrey man; his father's rights to Westbrook came by purchase. He was member for Haslemere, and in that way was able to render many public services. He was the first to insist on an inquiry into the condition of the London prisons. He was the creator of the province of Georgia, and arranged that for a term it should be held in trust for the poor, or, in other words, for poor debtors who had been tortured in the Marshalsea and sponging-houses of London. Oglethorpe, as governor, fought in defence of the colony against the Spaniards, and saved it and Carolina from them. It was characteristic of authority that when he returned to England he was refused repayment of the money he laid out in the public service. When in 1745 the Pretender's forces invaded England he was appointed major general. The Duke of Cumberland did not approve of his arrangements, and had Oglethorpe tried by court-martial, when he was acquitted. His vitality was marvellous. Describing his appearance in 1785 Horace Walpole said:—"His eyes, ears, articulation, limbs and memory would suit a boy, if a boy could recollect a century backwards. His teeth are gone; he is a shadow, and a wrinkled one; but his spirits and his spirit are in full bloom. Two years and a half ago he challenged a neighbouring gentleman for trespassing on his manor." That manor was not Westbrook, but Cranham, in Essex, which was one of his wife's estates. In his latter years he was more associated with Essex than with Surrey, but on the assumption that he occasionally joined the congregation of Godalming Church we gladly recall the memory of an English worthy, one of the empire-builders who united military skill with statesmanship, but who would now be ignored if it were not for the references to him in Johnson's biography.

Godalming Church has not been accepted as one of the leading examples of English Gothic. As a whole, or for any detail, it has not merited a place in books on the subject, and we suppose a student was never advised to draw inspiration from any part of it. On that account the more credit is due to Mr. Welman for showing that, if not a beautiful building, it is not without interest for all who endeavour to recreate the past from fragments. "Give us facts and not speculations about facts," was the old-fashioned advice to historians; in his book we have both united.

PRINCIPLES OF CONSTRUCTION FOR ARCHITECTURAL STUDENTS.

By the late E. Wyndham Tarn, M.A.

(*Continued from last week.*)

XII. *Iron Roofs.*

Roofs may be constructed throughout of iron on the same principles as those of wood, the truss forming a series of triangles between ties, rafters, struts and braces, only by using iron we need not have the tie-beam all in one piece, nor even in one straight line. The strength of each piece can be ascertained by means of the stress diagram, as in the king-post roof.

A common form of iron truss (fig. 10) for a roof of moderate span has the tie-beam divided into three parts, the middle part, E F, being horizontal and the side pieces, B E, C F, slanting slightly upwards from the feet of the rafters. These are held up by two slanting braces, A E, A F, from the heads of the rafters, which latter are stiffened by struts, E G, F D, from each joint of the tie. W being the load on each rafter, we suppose $\frac{1}{2}$ W to be supported at G, $\frac{1}{4}$ W at A and at B. To form the stress diagram (fig. 11), draw the vertical B D representing on scale the load 2 W, and bisect it at O. Take A B, C D, O E and OF, each to represent $\frac{1}{4}$ W; draw O *a* and O *c* parallel to the ties B E, C F (fig. 10); draw A *a*, C *c*, F *f* and E *e* parallel to the rafters A B, A C. Draw *a f* and *c e* parallel to the struts E G and F D; draw *fo* and *e o* parallel to the braces A E, A F, meeting the horizontal line O *o* in the point *o*. Then A *a* is the stress down the rafter G B, F *f* that down A G, on the same scale as O B representing the load W; *a f* is the stress down the strut E G; these parts are subjected to a compressive stress and are shown by strong lines. O *o* represents the tension in the tie E F, O *a* and O *c* that in the ties B E, C F; *of* and *o e* represent the tension in the braces A E, A F; these parts being subjected to tension are shown by dotted lines.

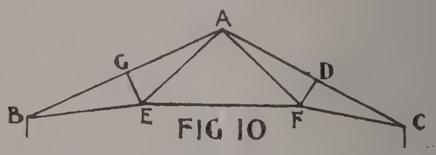

FIG 10

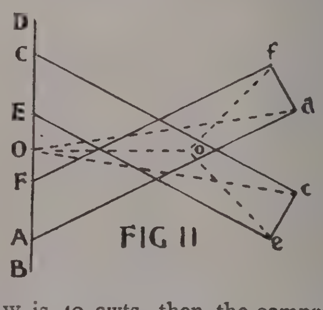

FIG 11

If the load W is 40 cwts., then the compression down the lower half of the rafter is 100 cwts., that down the upper half being 90 cwts.; the compression in each strut is 18 cwts.; the tension in each slanting tie-rod is 90 cwts, that in the horizontal tie is 50 cwts., and that in each of the braces is 53 cwts.; the angle of pitch being 27 degs.

From this we find that the rafter should be of tee-iron, having a flange 4 inches wide and $\frac{1}{2}$ inch thick, the web being 3 inches deep by $\frac{1}{2}$ inch thick. The slanting ties require a sectional area of $1\frac{1}{2}$ square inches and the horizontal tie an area of 1 inch.

Iron roofs for larger spans are generally a repetition of the above form, except in the case of bow-string trusses, in which both the rafters and ties form a part of a polygon with braces and struts at each angle. The compression in each piece of rafter is very nearly the same, and the tensions in the several parts of the tie-beam are also nearly equal.

(Several examples of stress diagrams are given in the author's "Mechanics of Architecture.")

Lattice girders of iron are used for flat roofs of large span, and are constructed with two horizontal booms connected by struts and braces, which cross each other and give rigidity to the beam. The strength of such a beam is proportional to the square of its depth. The stress in each part can be found as above by means of a stress diagram, and the requisite sizes to be given to them can be ascertained. If the bars cross each other, one-half of them will be struts, or under compression, and the other half will be braces, or under tension.

Arched-iron ribs are used for supporting a roof-covering over a wide span, the weight of which is laid on the ribs by means of longitudinal purlins. These ribs are made semi-circular or elliptical, and may be considered as arches uniformly loaded, the point of greatest thrust being in the circular rib at about one-third of the distance from the springing towards the crown, measuring along the curve, as in the arch of stone or brick, where it was called the joint of rupture (III.). There is, however, a great difference between an iron rib and one of stone voussoirs, there being no joints in the iron to open, as there are in the stone arch; so that, whereas the stone arch offers very slight resistance to a force which would open it at the joints, in the iron arch the resistance to such a force is the tensile strength of the metal, which must be torn asunder before the arched rib can break up. We have therefore to ascertain what is the least sectional area of iron that will resist the tendency of the thrust to produce fracture at the joint of rupture, or the section of the rib where the thrust is greatest. This can be done by comparing the "moment" of the upper two-thirds of the half-rib, taken about the joint of rupture, with that of resistance of a beam having the form of section given to the rib, allowing 5 tons per square inch as the safe stress.

Suppose, for example, that the ribs are placed 10 feet apart, and the usual load of a roof has to be sustained; then we find in this way that if the depth of the rib is 12 inches, and the metal half an inch thick and of I-section, the span being 20 feet, the width of the flanges should be 4½ inches in order that the rib may be strong enough for safety, the sectional area being 10 square inches.

The thrust of the rib at the joint of rupture is in this case 2·6 tons, which is found in the manner employed with stone arches; but in the iron rib this thrust is more than counteracted by the horizontal component of tensile resistance of the metal, which in this case amounts to 120 tons.

Suppose the rib to have a span of 30 feet, to be 12 inches deep, the thickness of metal being ¾ inch. Then we find that if the flanges are 8 inches wide the rib will be of sufficient strength. In this case the thrust at the joint of rupture amounts to 3·82 tons, but the horizontal component of tensile resistance is 240 tons.

Hence it appears that in the case of iron ribs which have sufficient strength to resist flexure, there is absolutely no horizontal thrust upon the supports. Moreover, since the tensile resistance so largely exceeds the outward thrust produced by the load on the rib, we may consider that the rib itself acts as a tie from wall to wall, as in the case of the trussed roofs before mentioned.

An economy in metal can be obtained by making the rib deeper at the base than at the crown. Let the span be 40 feet, the depth at base 22 inches, and at the crown 11 inches, the depth at the joint of rupture being 16½ inches; then if the thickness of metal is ¾ inch, a width of 8 inches in the flanges will give the rib ample strength.

(*To be concluded.*)

Mr. Vrooman, of New York, who is interesting himself in the proposed Ruskin Hall for Oxford University, has stated in an interview that he has been assured of sufficient funds to carry the scheme through.

LICHFIELD CATHEDRAL.*

An illustration we publish represents the restored choir after the alterations carried out under the direction of the late Sir Gilbert Scott. Among the purposes to be accomplished by the works were the rearrangement of the choir which involved the removal of the pulpit, lectern, &c., the replacing of the altar-table in its original position, the re-erection of a reredos and the use of the lady-chapel for early services. In a statement which was published when the restoration was contemplated, it was said:—Those who are familiar with the history of the church will recollect that the altar of St. Chad was where Chantrey's celebrated monument now is, that is, at the east end of the south aisle of the choir; and the altar of St. Peter on the opposite side, that is, the east end of the north aisle of the choir; that of St. Thomas in the side chapel of the south transept, and that of St. Stephen in the chapel in which is now placed a monument of Bishop Ryder. In addition to these there were other chapels, about twenty chantries being mentioned in Harwood's "History of Lichfield." The late excavations have brought to light some interesting facts relating to the former structures which have existed where the cathedral now stands. The foundations of a church less in breadth than the present church by the thickness of the walls on each side have been found, terminating towards the east in an apse, about midway of the present choir, that is, at the fourth pillar westward, reckoning from the lady-chapel entrance. In the extreme east part of this apse was discovered a round hollow space in the wall, 6 feet in diameter. These foundations belonged perhaps to the church which Bishop Jaruman is said to have built A.D. 667, and into which Bishop Hedda, in A.D. 700, translated St. Chad's bones, taken from the neighbouring church of Stowe. Of the history of the church said to have been erected by Bishop Jaruman, little or nothing is known, except that it suffered greatly from the Danes. About A.D. 1130 Bishop Clinton restored and enlarged, if he did not entirely rebuild, the cathedral of Lichfield. He built a bishop's palace at the north-west angle of the close, and added much to the wealth and dignity of his cathedral church. In his time, or soon after, the church was extended further eastward than the church ascribed to Jaruman—Clinton's church, namely, was extended to the place where the altar-table will now be restored to, that is, the second pillar west from the entrance to the lady choir. It is worth remark that, as in the former church, so also in this of which we are now speaking, there was a round hollow space in the east wall of about 6 feet diameter. Many foreign churches have tombs of eminent persons in the same relative position, and some of them not unlike in size, though many of them also larger. Under the place of the grand altar just mentioned was lately found a basin of stone at the distance of about 3 feet below the present floor, containing molten metal mingled with earth. That St. Chad's shrine was always near the chief altar cannot well be doubted. There is a well-known passage in "Bede's Ecclesiastical History," book iv., which may be here referred to:—"Ceadda died on the 6th of the Nones of March, March 2, A.D. 672, and was buried near St. Mary's Church; but afterwards, when the church of the most holy prince of the Apostle Peter was built there, his bones were translated into it. The place of his sepulchre is a wooden monument made like a little house covered, having a hole in the wall through which those that go thither for devotion usually put in their hand and take out some of the dust, which they put into water and give to sick cattle or men to taste," &c.

When Bishop Langton in 1296 still further lengthened the choir and commenced the lady-chapel the place of the grand altar was not disturbed. A screen or reredos was placed instead of the former east end, and it was then that the shrine of St. Chad was placed between the reredos and the lady-chapel. The additions which Langton made to the church were very considerable. He may almost be said to have rebuilt it, for the most part, as it now is, leaving only some parts of the previous church about the great tower, the transepts and the sacristy standing. This will account for the first three pillars in the choir (entering from the west) being older in style than the rest. To harmonise these, however, with the new arches eastward, as well as to give increased richness to the choir, six canopied figures, three on each side, were placed between the pillars just mentioned. The former figures, canopies and pedestals, were destroyed at the time, when also the cinquefoils between the arches throughout the choir were chiselled off with the same exquisitely barbarous taste, and at the same time were defaced and almost destroyed the mouldings of the arches themselves aud the capitals of the pillars, to give place to imitations of Gothic in plaster.

The six statues were described by Stukeley in the following terms:—"In the middle choir, upon six of the pillars, are six figures, three of a side. The first is St. Peter, and at his feet a little cross, which shows him crucified with his head downwards. The second is the Virgin Mary. The third is Mary Magdalen, figured with the leg and part of her thigh bare, as an emblem of her wantonness. On the other side is, first, St. James; second, St. Philip; and third, St. Christopher, with Christ on his back." The figures now to be seen in the cathedral were executed by Mr. William Farmer, to whom most of the stone carving is to be credited. The metal-work was produced by the late Mr. Skidmore, the woodwork by Mr. Evans, and the pavement by Messrs. Minton.

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* See Illustrations.

It has been objected that Sir Gilbert Scott's restoration transformed the old cathedral. But the condition of the building when he undertook it should be remembered. Lichfield had been already subjected to many operations which had changed its character. In 1795 a writer said of it, "Every method of confusion is introduced; the periods of Gothic architecture are confounded." About the same period Lichfield Cathedral was visited by John Carter, the architect, and he gives the following characteristic description of what he saw. His words will suggest what the old improvers dared to execute and the kind of legacy which was left for those who undertook the restoration of the building forty years ago:—

The changes which the cathedral has undergone since I visited it in 1782, the following memorandum will in part elucidate. The first object that arrested my attention on the exterior was the roof in its new appearance. Lead coverings, it must be allowed, give an air of dignity; they form a part of the great whole of ancient edifices, but are now wanting, having been removed, and common house-slating made to supply their place. It might be no unprofitable question to know the net value of the leadwork that belonged to this or any other cathedral to those who are fond of indulging themselves in the science of calculation. I missed also the several parapets, battlements and pinnacles; but in return I too plainly witnessed that the roof is now reduced to a dripping eave's finishing, like the coverings of a barn or any other outhouse repository. The south transept has lost much of its high enrichments by the shoring-up buttresses at the angles of its front, where we perceive more cube feet of masonry than correspondent work, to convince the world that the original parts were thought worth attending to. The north transept has been masoned, but in no sort to excite praise from me, who am intent solely on the minutiæ of our ancient architecture. With many of the windows in their mullions some liberty has been taken in displaying more the art of invention than the pride of being thought good copyists.

The Interior.—Imprimis, the new mode of the south and north transept doors. Ancient doors always show their foliaging ironwork or their panelled tracery on their outer face, while their inner face remained unadorned. In the present instance we have the panels within and a plain face without, not any way set forth to rank with the rich sculptures around them, as the former method so eminently contributed. For the sake of rendering the names of two late characters* conspicuous, whose bones and monuments are remaining elsewhere, the transept east windows have been blocked up; thus the very idea of the arrangement of this part of the church is lost in the modern mural obtrusions of innovating taste.

The entrance into the choir, taking in its general space from the pavement line to the point of the groins, is entirely shut out from the nave by the new screen and the glazier's work. Much of this screen is of fresh manufacture, and the rest is made up from the remnants of the demolished high altar-screen, as a communicative person who thought fit to attend my steps informed me. Indeed, I but too well remembered the divine beauties of that superb decoration, which I had classed with those of Winchester and St. Albans in their affinity of design and luxuriousness of enrichments. Here it will be no great difficulty to conceive in what sense I commented on this national loss. Yet, as my attendant observed, "This altar-screen is still in being, as there is no morsel of it but what has been preserved by being stuck up in one place or other. Here is a niche, there a buttress; observe that cornice, that pinnacle and those ornaments. But come with me—I will show you all the rest of them as we look about. Now, sir, we are under the organ-loft; here on each side are more of the high altar niches, Ah! you need not doubt but your notes shall have each particle that you are in quest of." Willing to listen to every intelligence in this scene of transformation, by way of bringing back my astonishment to some sort of accountable point, I still remained silent, which my attendant no doubt conceived was the effect of unutterable delight at beholding something new. "Now, sir," he went on, "we are in the choir, where you see all its beauties at once from one end unto the other; not, as when the altar-screen was up, to trouble strangers in their inquiries about other sights, still lengthening out their charms, as they called it, by peeping over the screen, or prying behind it for founders' chapels, chantries, monuments and I know not what, as they said were to be found in other un-un-*improved* [ah! that was the word] cathedrals. Do not mind those stalls; we have not got new ones yet—all in good time. But look at the fine painted east window, which, to give an effect like some exhibition transparency, we have darkened all the surrounding ones. I observe your eyes are not very clear, therefore you must come quite close to see our new pretty little altar-piece. It is rather in obscurity, to be sure; but this part of our show is not of much consequence. Now turn round. There you shall behold all and everything in pomp and state, as the organ, its screen, the stalls before it and the glass window behind: this is our grand display, which from this shadowed spot is seen to the finest advantage of light and shade." Recovering at last my speech, I begged to know what could possibly be the cause why the arches above the stalls, and those in continuation opening into the side aisle, had been stopped up, whereby those diversity of lines given by intervening windows, columns and groins were hid from the inquiring sight ever most pleased at such diversifying objects. "Ah! sir," my attendant answered, "did you but consider the strict service of this choir twice a day, and how desirable a thing it is to be snug and warm, although little more than half an hour does the business, you would not be surprised at this stopping-up, as you are pleased to call it, to keep out the cold, whereby we are rendered as comfortable as any public room in the kingdom could make us." "Very good," I rejoined; "now show me into the side aisles." "This way, sir. And pray how do you like this closet doorway opening into the aisles? Quite handy. Take care; we are somewhat at a loss for want of light in these aisles, but they are of no use now; so give me your hand and I will lead you to the chapter-house. Here again we are made comfortable, good wainscotting keeping the chills and damps from the walls and the columns which are hid behind it. All is improvement in this cathedral; everything is so smart, with whitewashing, painting and glazing. Ladies and gentlemen can now attend without the fear of taking cold, or the dread of seeing anything to make them think about dying and all that." Thus was I entertained by this kind friend as we were returning along the aisles into the choir when certain deplorable children in dirty ragged stuff gowns flitted by me. At first I was rather startled at appearances which I took, in these dim aisles, from a momentary error of the mind (common with me in such situations), as supernatural beings; but their stations in the choir soon dispelled all doubt but what hung on the cause why some little savings from the late expenditure on all these improvements might not have robed them in decent surplices, as is the custom in other cathedrals.

Compressing my opinions from all that I had noted of the present state of this cathedral, I found that architectural innovation had here taken its full swing, by disarrangement, demolition and modernisation, with some tolerable attempts at the minutiæ of ancient workmanship, but crippled and chained to professional ideas of improvement after the "heathen school" taste. I discovered also that more partiality had been shown for modern accommodation than for ancient grandeur; and whether earthly sweets or heavenly joys were here meant to be the order of the day (previous to the commencement of the service), I or a greater stranger would find it difficult to determine. On leaving this once favourite scene of antiquarian delight I bore away this impression, that if I hoped to continue on my practice of Christian duties, innovation should never lead the way.

BETCHWORTH AND BROCKHAM GREEN.*

ALTHOUGH the members of the Norwood Athenæum take especial interest in places renowned in history or in ancient houses and castles, yet being human they will be at no loss for material enjoyment in a purely rural walk, and starting from Dorking, through a beautiful avenue of limes and past the "God's acre" where the past inhabitants sleep, we enter Betchworth Park, which is delightfully situate on a pleasant piece of land not far from the range of chalk hills on the north.

This park was enclosed about the year 1450, and it is said that the very wonderful Spanish chestnut trees which now adorn it were then existing. Some are the victims of age and decay, and the bleached trunks of others seem as if they had been blasted by electric power. Those still living and flourishing are enormous, some of them being about 30 feet in circumference. Occasionally there are peeps of the deep valley in which the Mole meanders on towards old Father Thames. On leaving the park proper we emerge on another portion with a fine modern road, passing on our right the ruins of Betchworth Castle.

In Norman days it was held by Richard de Tonbridge; it then passed to the Earls of Arundel, and in 1377, when owned by John Fitzalan, who was afterwards created Baron Maltravers and Marshal of England, he obtained permission to embattle the manor house. In the next century the Browns were in possession, and in 1449 Sir Thomas Brown obtained the royal license to further fortify his castle and to empark the manor. For over two hundred years, with the exception that the estate was more than once forfeited to the Crown, no change was made in the ownership, and in 1627 Ambrose Brown was created a baronet. His successor, Sir William Brown tried his hand at poetry, and produced a volume entitled "Britannia's Pastorals." In 1690, when Sir Andrew Brown died, the property passed to his only daughter, who by her marriage conveyed it to William Fenwick. He evidently was a man of peace, and pulling down a portion of the castle, he erected a dwelling-house near by. A later owner was Abraham Tucker, who wrote a metaphysical work entitled "The Light of Nature Pursued"; he died in 1774 at the age of sixty-nine, and was buried in St. Martin's Church, Dorking. To Henry Peters, the banker, the property then passed by purchase, and eventually it was acquired by Henry Thomas Hope, and added to Deepdene. An ivy-clad ruin of little architectural beauty is all that now remains of the castle, and passing onwards we soon emerge on the beautiful village of Brockham Green. The Green is well preserved for cricket on Saturdays and holidays, pretty houses covered with ivy and other creeping plants are all around, with flowers in abundance in the gardens. There is everywhere apparent comfort, and absence of dire poverty and squalor. Facing the Green stands Christ Church, a modern cruciform church, built by Benjamin Ferrey, in the Early English style, as a memorial to the Goulburne family, on ground given by Henry T. Hope.

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* Johnson and Garrick.

* A paper read by Mr. J. Sinclair at the visit of the members of the Upper Norwood Athenæum.

At Brockham Lodge, Morris, the society song-writer of the Regency, ended his days, still honoured by *bon-vivants*, for there, as tradition tells us, the Duke of York and the Prince Regent were numbered among his guests. But when the captain was laid to rest in the churchyard at Betchworth laughter and song were heard no more, for William Bennett, a member of the Society of Friends, obtained the lease of Brockham Lodge.

We leave the Green, pass by some fine elms, and following the bank of the Mole soon reach Betchworth Church, a spacious stone building mainly Early English, but with Saxon, Norman, Decorated and Perpendicular features. The old tower, with a Norman base, stood between the nave and chancel. It was removed in 1851, and a new one was erected south of the church by Mr. E. C. Hakewill, who made other alterations in the building. In 1870 further alterations and restorations were made.

The church contains a very remarkable iron-bound chest, about 7 feet 3 inches long, hewn out of the trunk of an oak tree. The pulpit is of Devonshire marble, a gift from a resident. There are several monuments in the church, and the most remarkable gift is five oak stalls in the choir, all beautifully carved by a lady resident, the work of five years—her labour of love and offering to the church. The stained windows are mostly modern. There is a tablet containing the names of all the ministers of whom any record remains, and on another the virtues of Sir Benjamin Brodie, a distinguished physician, are recorded. The churchyard is large, and has been lately added to, whereby one infers that the parish is large, though the village is small.

Passing through the churchyard we make our way to Moor Place, a very old timber and wattle house, which has been preserved and renovated with much skill and care. It reminded one of houses seen in Shropshire and Cheshire.

In the manor of Betchworth a division was made, and East and West Betchworth were formed. Further subdivisions followed, and separate manorial rights were acquired by Brockham Green and Moor Place. Of the early fifteenth-century house that was built on the open moor, near the bank of the burrowing Mole, little possibly remains. The old foundations may be there, but timber uprights have been removed and wattle walls have been strengthened, and ages hence it may be hoped that Moor Place will stand as firm and picturesque as it does to-day. Half a century ago plaster ceilings were swept away and massive oak beams were revealed, and in recent years Mr. J. R. Corbett has succeeded in removing the many coats of whitewash from the elaborately carved Jacobean chimneypiece. An artistic fireback cast at Horsham, which is believed to have done duty in the home of the Evelyns at Wotton, adorns the grate. It is similar to one at Windsor Castle, and represents a cavalier and lady in the time of the Stuarts. In the careful preservation of the house, in the artistic furniture it contains, and the many volumes that give life to the library, the kindly owner shows the interest he takes in the memorials and in the records of the past.

ST. JOHN'S CHURCH, GLASTONBURY.

THE Archbishop of Canterbury has promised a donation of 20*l.* towards a fund now being raised for the restoration of St. John's Church, Glastonbury. The general committee, which includes the Bishop of Bath and Wells, the Bishop of Bristol, Lord Cork and Sir Edward Fry, has issued a pamphlet giving views of the fine tower with its scaffolding and of the church with its chancel shored up, as well as of the abbey ruins, with which the appeal is not concerned. But the church is closely connected with the abbey, whose sacristan used to be ex-officio rector of the parish. It was in St. John's Church that the hundred bishops assembled when they visited Glastonbury at the close of the last Lambeth conference, and the committee hope that the historical interest attaching to Glastonbury as a "cradle of saints" and a "burial-place of kings" will aid them in their effort to restore their splendid church. The work is under the care of Mr. E. Buckle, the diocesan architect, and is estimated to cost 6,000*l.*, of which 1,400*l.* has been raised in the neighbourhood.

WRITING IN PREHISTORIC GREECE.

IN a letter to the *Times* Mr. Arthur J. Evans writes:—In my excavation of the prehistoric Palace at Knossos I came upon a series of deposits of clay tablets, representing the royal archives, the inscriptions on which belong to two distinct systems of writing—one hieroglyphic and quasi-pictorial, the other for the most part linear and much more highly developed. Of these the hieroglyphic class especially presents a series of forms answering to what, according to the names of the Phœnician letters, we must suppose to have been the original pictorial designs from which these, too, were derived. A series of conjectural reconstructions of the originals of the Phœnician letters on this line were, in fact, drawn out by my father, Sir John Evans, for a lecture on the origin of the alphabet given at the Royal Institution in 1872, and it may be said that two-thirds of these resemble almost line for line actual forms of Cretan hieroglyphics. The oxhead (*Aleph*), the house (*Beth*), the window (*He*), the peg (*Vau*), the fence (*Cheth*), the hand (*Yod*) seen sideways, and the open palm (*Kaph*), the fish (*Nun*), the post or trunk (*Samekh*), the eye (*Ain*), the mouth (*Pe*), the teeth (*Shin*), the cross-sign (*Tau*), not to speak of several other probable examples, are all literally reproduced.

The analogy thus supplied is indeed overwhelming. It is impossible to believe that, while on one side of the East Mediterranean basin these alphabetic prototypes were naturally evolving themselves, the people of the opposite shore were arriving at the same result by a complicated process of selection and transformation of a series of hieratic Egyptian signs derived from quite different objects.

The analogy with the Cretan hieroglyphic forms certainly weighs strongly in favour of the simple and natural explanation of the origin of the Phœnician letters which was held from the time of Gesenius onwards, and was only disturbed by the extremely ingenious, though over-elaborate, theory of De Rougé.

Whether, however, the Phœnician letters, or rather their pictorial originals, were actually selected from the Cretan characters is a different question, and on this I wished to express myself more guardedly. The correspondences are, indeed, so striking that they certainly seem to point to, at least, a generic connection, though one form at least, the camel's head and neck (Gimel), must have been adopted on Syrian soil.

What I ventured to suggest at the Bradford meeting was that the points of community might be ultimately explained by the powerful settlement of the Ægean island peoples on the coast of Canaan, represented by the Philistines and the abiding name of Palestine. The Biblical traditions which gave part of them at least the name of Kerethim or Cretans have been recently confirmed by an important piece of Egyptian evidence going far to show that Kaphtor, whence they traditionally came, is the same as the insula realm of the Kefts, the chief representatives of Mycenæan culture on eighteenth-dynasty monuments. The prolonged sojourn of the Caphtorim or Philistines in their new home would itself explain the adoption of local elements among the hieroglyphic forms that they had originally brought over. We know that they shortly lost their indigenous speech and became Semitised.

On the walls of the tomb of Rekhmara, the Governor of Thebes under Thothmes III.—in the first half, that is, of the fifteenth century B.C.—the Keft chieftains are seen bearing precious vases and ingots and golden oxheads as tributary gifts to Pharaoh. It is of great interest in relation to the chronology of the clay archives of Knossos that on several of the tablets with linear inscriptions—in this case, no doubt, containing inventories of the Royal treasure—there appear beside the written record pictorial representations of vases, ingots and oxheads precisely similar to those of the Egyptian painting. It seems probable from this that part of the clay archives of the Palace of Knossos go back to the fifteenth century B.C. The date of the most recent is at all events limited by that of the destruction of the palace itself. Of the numerous relics found within this great building there are none which point to a period as late as the latest prehistoric elements of Mycenæ itself. It would be extremely unsafe to bring down anything found within its walls later than, at most, the twelfth century B.C.

NOTES AND COMMENTS.

An archbishop of Dublin in the early period of English rule was required to have military prowess. There were wild tribes among his subjects who were not particular when raiding to draw distinctions between secular and ecclesiastical property. Among the castles erected to prevent incursions was one at a place now known as Ballymore-Eustace, in co. Kildare. According to the "Black Book" of Archbishop Alan it contained a hall, a chamber for the archbishop, a chapel, a small chamber for clerks, a kitchen roofed with shingles, a thatched stable and grange. No trace of the castle can be found, and there are doubts about its position. The members of the Kildare Archæological Society visited Ballymore-Eustace, when Sir Arthur Vicars, Ulster King-at-Arms, read a paper on the history of the place. The manor formed the boundary of the Pale, close to the mountainous country, which for centuries sheltered the turbulent septs of the O'Tooles and the Byrnes, who never lost an opportunity of harassing the new settlers on their ancient patrimony in Kildare, from which they had been driven by the Normans. In the time of Pierce, eighth Earl of Ormonde, Lord-Deputy Robert Talbot, a great favourite of his, was hated by the Geraldines, who suspected him of spying on them, and giving information about them to Ormonde. As he was on his way to spend Christmas at the castle he was met near Ballymore by a party of the Geraldines, who set on him and left him dead on the road. So incensed was the Earl of Ormonde when the news reached him that he brought an impeachment against the Earl of Kildare in England. In the churchyard there are two Celtic crosses, one 11 feet in height, but there is nothing else to recall antiquity. The scenery is picturesque, and seems ill adapted for a region which was once disturbed by broils and battles.

The next convention of the American Institute of Architects will be held in Washington early in December. There will be two interesting exhibitions of drawings. One will consist of the Phœbe Hearst competitive plans for the University of California. In the second the drawings sent from America to the Paris Exhibition will be shown, besides working drawings of Government buildings in the United States by private architects. At the present time schemes for the grouping of public buildings in Washington are mooted, and it is supposed there may be legislation on the subject in the next session of congress. Papers will therefore be read on "The Grouping of Federal Buildings, Monuments, Statuary and Landscape in Washington City," by Mr. J. C. Hornblower, Mr. C. Howard Walker, Mr. Edgar V. Seeler, Mr. Frederick Law Olmsted, jun., and Mr. H. K. Bush-Brown. Mr. R. H. D. Hamlin will read a paper on "Italian Gardens," and Mr. John G. Howard one on "French Gardens." "English Gardens" will be treated by Mr. R. Clipston Sturgis, and it is expected a Japanese will describe those of his country. Finally, Mr. Walter Cook will read a paper on "The Progress of Architectural Design during Recent Years."

The question of tenures is now creating some uneasiness among foreign residents in Japan. In this country we are acquainted with a variety of them, and there can be no doubt about the shortness and uncertainty of some having an ill effect on architecture. In Japan foreigners were able to secure leases in perpetuity from the Government, and having so much security, there was no hesitation about the erection of expensive buildings. Recently it was decided to adopt the system of registration of property, and when foreigners wished to observe the regulations they discovered that no provision was made for leases in perpetuity, for the law did not recognise them. On remonstrances being made the Government proposed to describe the tenure as a "superficies," with the State as the owner. The dissatisfaction was not diminished by the proposal to add "perpetual lease" to "superficies," but in brackets. So peculiar an arrangement is enough to compel men of business to doubt whether the simplicity does not conceal some crafty operation which sooner or later will affect the value of the title to property acquired by them. In such case it is difficult to restore confidence, although the apprehension may arise simply from Japanese circumlocutionism endeavouring, after the English example, to save itself from a little extra labour. Another question which causes discontent can be more easily arranged. Since Japan is imitating Western Europe, it must adopt western methods of raising money. One of the consequences is that foreigners who were subjected only to land tax, without any assessment on account of the buildings on the land, now find they have to pay taxes on the buildings. There is it appears nothing in the treaties which points to such a levy, but when they were made it was not anticipated that Japan would have recourse to the civilising agencies of an immense navy and army. In course of time we may expect good sense will prevail and compromises will be arranged, but the Japanese should recognise that substantial buildings in European style are not as easily erected as their own picturesque combinations of lattice-work and paper, and on that account nothing should be done which would impart uncertainty to the rights of the builders.

The disposal of slag is a problem which other countries besides England find difficult to solve. Many efforts are made from time to time, but they all seem to be unequal to the colossal task. An experiment is about to be tried in the United States, which is at least marked by novelty. The authorities of North Tonawanda, New York, have agreed to allow an iron and steel company to lay down rails along a road which is in a defective state provided the whole surface, which is about 66 feet in width, receives a coating of slag. The material is to be conveyed in a molten state in iron waggons along the rails, and at fixed intervals is to be poured over the roadway. After a time it will become consolidated. Slag has been used in road-making, but North Tonawanda will be the first town which can show a road that recalls the labour of the "spirits reprobate" when they "from the boiling cells, by strange conveyance, filled each hollow nook" in the Miltonic chaos.

The Brown Book of the Architectural Association has appeared. According to the annual, the membership at the end of last session, or May 31, numbered 1,308. The new common-room has been well used, especially during the evenings. The question of obtaining a suitable site for new premises occupied the attention of the committee, but no definite result has been attained. The sub-committee appointed to compile a list of interesting buildings and premises in London and the provinces was augmented, and fifty-five consuls were nominated for the London district, which will be first treated. Among the prizes gained by members in the Royal Academy were the gold medal and travelling studentship (Mr. H. C. R. Hide), and the premium for design, Upper School (Mr. H. Inigo Triggs, who also obtained honorary mention in the competition for measured drawings at the Institute); the Godwin Bursary (Mr. S. K. Greenslade), the Grissell Medal (Mr. C. E. Varndell) and the Ashpitel Prize (Mr. R. T. Barker). Mr. G. H. Lovegrove monopolised most of the prizes at King's College. The income for the year amounted to 1,911*l*. 4*s*. 11*d*., which, after payment of expenses, leaves a balance of 162*l*. 1*s*. 5*d*. for the premises and general fund. The condition of the Association is, therefore, satisfactory in all respects.

The Royal College of Art will be opened at South Kensington on October 16. The total number of students to be admitted to the college is 350, of whom 150 may be fee-paying students. The fee for each fee-paying student will be 12*l*. 10*s*. per term, and there are two terms in each session of twelve months. All students admitted (either free or on payment of fees) must have satisfied the council of their ability to profit by the special courses of instruction, to provide for which the college has been divided into an upper and a lower school.

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: THE CHOIR AND REREDOS. SOUTH SIDE OF NAVE AND SOUTH TRANSEPT. VIEW FROM CATHEDRAL CLOSE.

BISHOPSFORD, MITCHAM: BILLIARD-ROOM.

HOUSE, WEYMOUTH PARK, WALTON-ON-THAMES. FROM GARDENS.

STAINED GLASS IN ENGLAND SINCE THE GOTHIC REVIVAL.

WITH SOME ACCOUNT OF THE CHURCHES REFERRED TO.

By T. Francis Bumpus,

Author of "Ecclesiologia Germanica," "Summer Holidays among French Cathedrals," &c.

(*Continued from page* 156.)

The Works of Hardman.

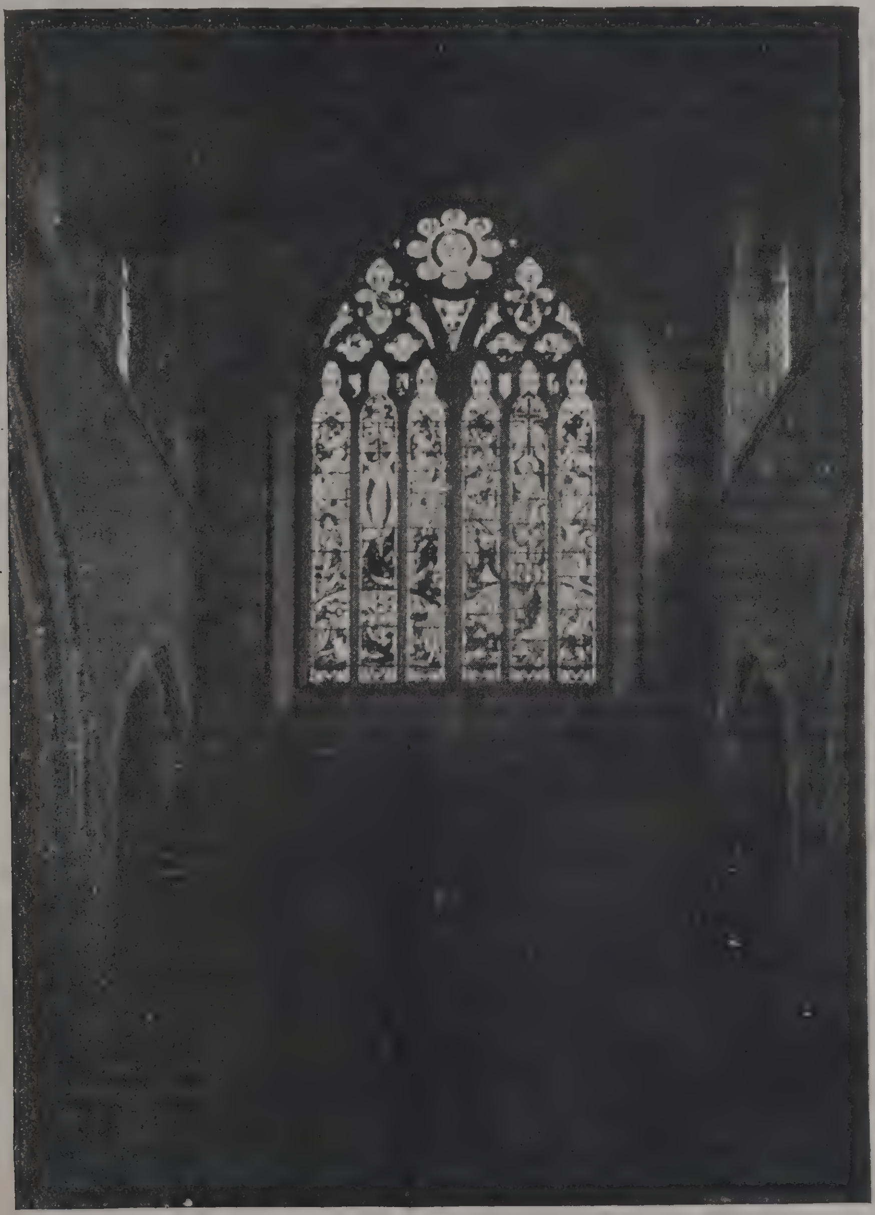
FORTY-FIVE years ago, when the Lille Cathedral competition and Mr. Ruskin's teaching were sending the current of English architectural taste in the direction of France and Northern Italy, a small band of practitioners, among whom was the late Mr. Henry Woodyer, strove to resist this fascination.

Yet St. Michael and All Angels Church, Tenbury, consecrated September 29, 1856, exhibits sufficient departures both in plan and detail from home traditions to raise it far above the commonplace, while it shows none of that extravagance and bizarrerie which too often resulted from attempted originality.

This is noticeable in the artistically planned and nobly proportioned masses of steep roofs which meet at the crux without a central tower; in the roses which light the transepts; in the employment of the hexagonal apse, and in the tracery of its windows, where the presence of a large trefoil, impaled, so to speak, upon the central mullion, is rather reminiscent of German work. Indeed, the thorny character of the tracery, not only here, but in other of Mr. Woodyer's churches, may have been inspired by such refined examples of Middle Pointed traceries as occur in the choir aisles of the Liebfrau Kirche at Coblenz, though it must be admitted that on the whole the churches of this architect exhibit great freedom and independence of thought, and Early Fourteenth-Century Gothic, without ever becoming vitiated, has ever retained in his hands as great a freshness, vigour and originality as that of his master, Mr. Butterfield, besides possessing an individuality which it is difficult to mistake.

The church of the Holy Innocents at Highnam, near Gloucester, that of the Holy Trinity at Winchester, Christ Church, Reading, the Hertfordshire village churches of Langleybury and Goldings, St. Augustine's, Haggerstone, St. Martin, Dorking, and the chapels attached to the Convalescent Home at Eastbourne, St. Raphael's College, Bristol, and the Houses of Mercy at Clewer and Bovey Tracey, are only a few of the works of Mr. Woodyer, each of which is stamped with the impress of an architect pre-eminently capable of grasping the Mediæval spirit.

Occasionally, however, an eccentricity peeps out, as, for instance, in St. Raphael's College Chapel, Bristol, in the corbels of whose nave arcade running blocks and other ships' tackle are produced by way of nautical emblems with literal fidelity; in Christ Church, Reading, where the arch separating

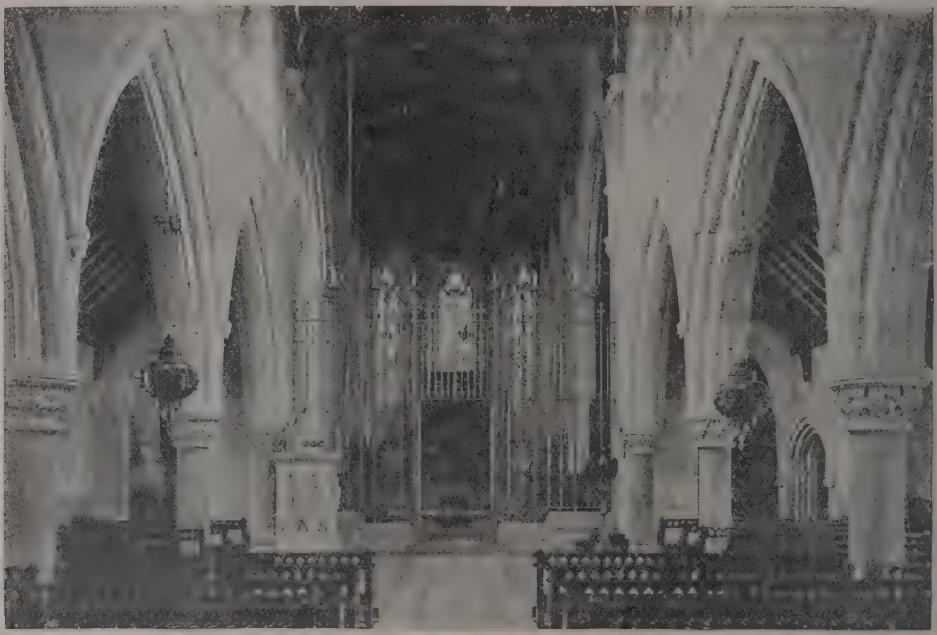


St. Michael's Church, Tenbury. Great West Window.

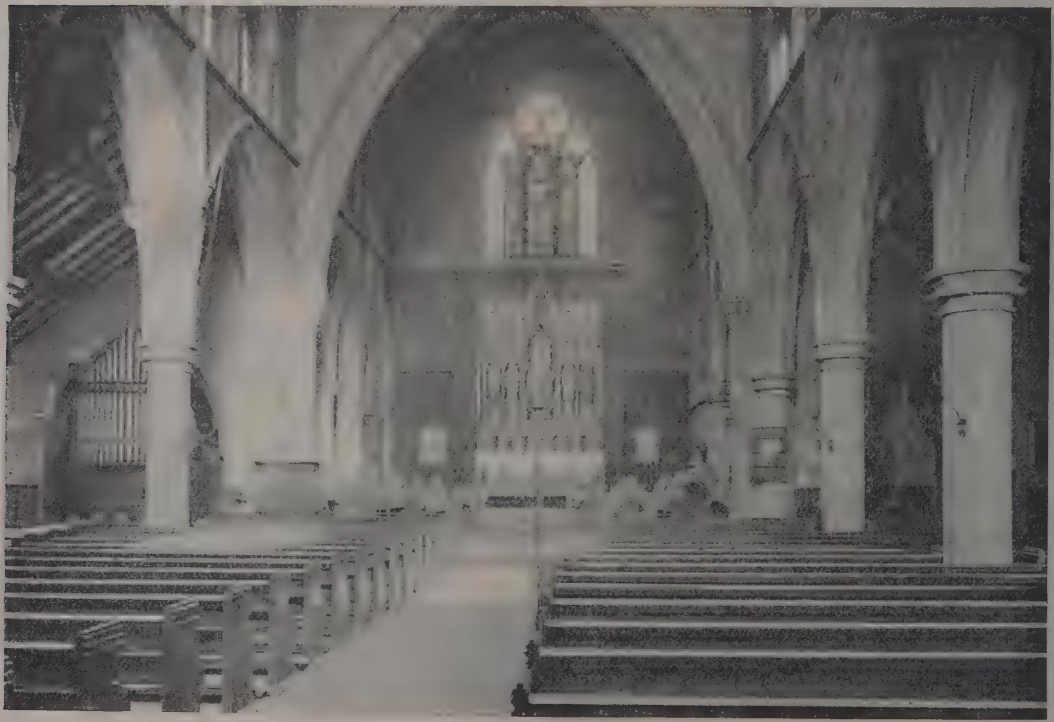
the nave from the chancel is composed of an obtuse-headed within a pointed one, the intervening space being filled with tracery work; and in the tower of St. Paul's, Wokingham, whose coupled windows occurring immediately under each other repeat the same proportions. But for all these little idiosyncrasies their architect could no doubt, if called upon, have been able to give chapter and verse.

Mr. Woodyer's temperate departures from insular precedent express themselves in the church of the Holy Trinity at Winchester, whose aisled and clerestoried nave and chancel, contained beneath one line of roof broken only by a slender flèche, recalls sundry Belgian examples, though, to carry out the idea of its prototypes to the full, an aisleless apsidal chancel is requisite. At present, the east end being square (it is lighted by a large Geometrically traceried window), and with the aisles prolonged to the same level, the church presents a somewhat truncated appearance.

Seven bays of rather acutely-pointed arches on octagonal columns, with simply moulded capitals, carry the graceful clerestory and steep open-timbered roof, and out of the two easternmost the chorus cantorum and sanctuary are formed. There is not even a change in the form of the piers or in the roofing to denote the more sacred portion of the edifice,* a very tall rood-screen (one of a type much favoured by the architect) alone serving to mark the improvised and therefore not very satisfactory choir and sanctuary.



St. Michael's Church, Tenbury. Nave looking East. (*Henry Woodyer, Architect.* 1856.)



St. Augustine's, Haggerstone. (*Henry Woodyer, Architect.* 1867.)

Another church by Mr. Woodyer of a somewhat similar kind, and, like the one at Winchester, deficient in the apse, is St. Augustine's, Haggerstone. Here externally we miss the flèche, but inside a very pronounced chancel arch, whose somewhat low pitch leaving considerable wall space above it has quite a Butterfieldian air, forms a very striking demarcation between the two portions—the pitch of the chancel roof being kept, irrespective of the arch, at the same height as that of the nave, from which it differs in form, and with very impressive effect.

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* Mr. Woodyer was quite helpless in the matter, the church being designed for a type of service widely different from that for which has since become celebrated.

St. Augustine's stands some way back from its locale—York Street, Hackney Road—and, if rather deficient in height, its boldly-contoured outline forms a sufficient relief to the prosaic dinginess of its environments, the western façade with its three severely Geometrical two-light windows surmounted by a large traceried rose telling to great advantage.

This church, whose interior has been selected for illustration on account of its singularly beautiful reredos, is one of a group* built in the parishes of St. Leonard, Shoreditch, St. John, Hoxton, and St. Mary, Haggerstone, mainly through the exertions of two pious and munificent laymen, between 1860 and 1870, one of the most interesting and fruitful decades in the history of modern church building.†

If wanting in some of those striking and abnormal features which distinguish the neighbouring and sister churches of St. Columba and St Chad—shorn as it was from pecuniary considerations of much of the exuberance and fancy that characterised the architect's original plans—St. Augustine's has externally a *cachet* about it which it is impossible to mistake, proving to us that, however simple the materials, they need never become uninteresting or mean when manipulated by a master.

Holy Trinity Church, Winchester.

The accompanying illustration conveys a good general idea of St. Augustine's, Haggerstone, the almost Cistercian sternness of whose interior is relieved by the graceful reredos and by the stained-glass with which Messrs. Shrigley & Hunt—comparatively new names in this branch of ecclesiology, but which certainly deserve to be mentioned with commendation—have partly filled the east window. It is to be wished, however, that these gentlemen in the glass with which they have equipped the two lancets above the altar in the side chapel had not introduced a type of work so cinque cento in feeling. Nowadays, when such strides have been made in the art of glass painting, when draughtsmanship and colouration have reached a point which it seems hardly possible now to surpass, the medallion style of treatment—so *de rigueur* with artists of half a century ago, but which they too often only succeeded in rendering grotesque—might, by way of variety (to take the lowest view of the subject), be more generally adopted than it has hitherto been of late years.

The sculpture in the reredos, whose feathered pinnacles and acutely foliated niches beneath straight-sided canopies are very characteristic of its designer, and which has recently been lavishly decorated in gold and colour, was entrusted to Mr. Thos. Nicholls, the effigies to the left of the Crucifixion being those of St. George (patron of England) and St. Augustine of Canterbury (patron of the church and district); while those to the right are, very appropriately, St. Leonard (titular saint of the parish of Shoreditch) and St. Paul (patron of the diocese). So uniquely beautiful a work of its class as this is worth a pilgrimage to the dun-coloured region of its locale to see, appearing to peculiar advantage when the tapers on the altar are alight.

The nave of Dorking parish church, completed in 1874 from Mr. Woodyer's designs, on the site of a compo affair in the Gothic of sixty-five years ago, is, without presenting any very striking departures from English Mediæval precedent, a favourable specimen of his powers, its northern elevation, owing to the gradual slope of the churchyard from south to north being of considerable grandeur, while the tower and spire (a memorial to Bishop Wilberforce), if lacking that elegance so characteristic of the architect's early steeple at Highnam, produces a very favourable impression on the visitor who approaches it from Church Street, on account of its solidity of buttressing, its bold fenestration and the grandiose cinquefoil headed entrance doorway at the summit of a flight of steps.

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* St. Michael's, Shoreditch (Mark Street, Finsbury), consecrated in 1865; St. Saviour's, Hoxton (Hyde Road), finished in 1866; St. Columba, Haggerstone (Kingsland Road), and St. Chad, Haggerstone (Nicholl Square), both completed in 1869. The impression made upon the writer's earliest years by the grand proportions of these then newly-built churches has never been effaced, and he will always point to them as some of the noblest conceptions of their architect, Mr. James Brooks, whose clever recasting of the interior of the Georgian Gothic parish church of Haggerstone in 1860-61 brought his name prominently before the Ecclesiological Society.

† One of the munificent and pious laymen above alluded to was Mr. Richard Foster, ever to the fore in the cause of church extension; another, of whom mention has been made several times in the course of these papers, Robert Brett, of Stoke Newington Green, churchwarden for many years of St. Matthias's, the indefatigable promoter of grand architecture and stately ritual, and whose unflinching advocacy both by voice and pen of the free and open church system caused him to become the subject of one of the late Dr. Littledale's witty nursery rhymes in the "Book of Nonsense" style:—

A surgeon there was at Stoke Newington,
Who never would have any pewing done;
  If the church wasn't free,
  He exclaimed, "Oh! dear me,
Those boxes I soon must be hewing down."

And it may here be mentioned that to the proceeds of the sale of such of Brett's books as the "Churchman's Guide to Faith and Piety" and "The Doctrine of the Cross," these stately fanes of the Shoreditch and Haggerstone Church scheme owe their existence in no small degree. "What amateur or dilettante," says Mr. Eastlake, "would ever think of exploring such neighbourhoods as Shoreditch, Hoxton and Plaistow in search of architectural beauty? Yet those outlying regions in the far east of London contain some of the largest and most remarkable churches which have been built during the Revival. . . . There was but little money to spend on them, yet they were to be of ample size, and for obvious reasons dignified and impressive in their general effect." These churches do not contain any specimens of the stained-glass of the artist whose works form the text of the present section of these papers, but as Messrs. Clayton & Bell are admirably represented in more than one of them, some further account of this striking architectural group will be given when the works of those artists come under consideration.

The chancel, deep, aisleless and Flowing Decorated in style (the nave is Geometrical) had been rebuilt some years earlier (1867-68) on the site of the old one, of which the present professes to be a copy. It was in anticipation of finding the windows in this portion of the church filled with stained-glass from Hardman's ateliers that the writer lately paid a visit to Dorking. To his disappointment, however, he found all the chancel windows equipped with Wailes's glass, most of it of that feeble kind too often produced by him when not under architectural supervision, or when the circumstances attendant upon its execution failed to call forth peculiar exertions on his part.

Glass by Wailes, of the same feeble and commonplace, not radically bad, character came under the writer's notice during his recent south-west Anglian tour in the large church of St. Mary Church, near Torquay, rebuilt some forty years ago in a very sumptuous manner on the site of an old edifice from the designs of Mr. Hugall*—a work which will ever be associated with one of the most zealous promoters of the Church Revival movement of half a century ago, the Rev. Henry Newland.

In the nave of Dorking Church, separated from the deep aisleless chancel by a tall oak screen, Mr. Woodyer discarded the traditionary five bays of normal width in favour of four of more expanded dimensions—an arrangement which, if depriving his interior of some of that poetry of design, has secured for it an appearance of much greater size, besides affording a less interrupted view of the pulpit and altar.

These four wide arches, whose drip-stones terminate in elongated bunches of carved foliage, spring from cylindrical shafts of Forest of Dean stone with simply moulded caps. The same type of column, both in shape and material, had been employed by Mr. Woodyer, but with capitals carved in natural leafage, in the nave of St. Michael's, Tenbury, to which, after so lengthy a digression, we must now revert, but chiefly to notice its vitreous decoration—that of the apsidal and grand western windows being some of the very finest carried out by Hardman during the interesting period of the Revival comprised between 1850 and 1865.

In the former the stained-glass was in position when the church was consecrated, the iconography being selected with reference to the dedication of this, the first collegiate church founded in England since the Reformation, and one of the loveliest architectural efforts of the century.

The central window of the apse has in the dexter light Our Lord, vested in red and gold, with, in the sleeve of the under robe, a band of blue, seated upon a white throne, with the crocketed upper portion of which the compartment is filled, and standing before Him in the sinister light St. Michael. Each of the four side windows of the apsidal sanctuary—whose walls exclaim for pictorial decoration or tapestry to relieve their somewhat unpleasant coldness—has a large angel in finely disposed white and gold draperies, positive colour being supplied to the composition by the pronounced yet delicate tincturing of the wings, which are carried up above the heads of the effigies so as to fill the upper part of the light. In the clerestory windows of the spacious presbytery—quite distinct from the choir, which is formed within the transept—and whose arcade is subdivided in a manner for which Mr. Woodyer had a penchant, some small but finely coloured figures of the heavenly hierarchy are spoilt by the iron bars outside. The stained-glass in the great west window—a noble composition of six lights—was inserted some years later than that in the apse, and represents in the dexter light the Atonement, and in the sinister the Doom, but through an unfortunate error in printing the accompanying illustration from the negative the subjects have been reversed. Although much red and purple is used in this window we do not for once desiderate white. In the Doom some flowering on the robe of Our Lord, and in the Crucifixion the groups of angels in adoration of the rood, which is placed within a vesica, are specially worthy of commendation. Under conditions of a fine sunset this western window at St. Michael's, Tenbury, appears more than ordinarily magnificent.

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* The lofty pinnacled tower at the west end of St. Mary Church forms a memorial to Bishop Phillpotts ("Henry of Exeter"), who died here in 1869, and was buried in the beautifully kept churchyard. The tower opens to the church by a well-moulded arch springing from corbels attached to flat responds, and its vaulting in courses of red, white and grey is an effective piece of natural polychromy. Grouping pleasingly with this pinnacled tower in distant views is the spire of the almost contiguous Roman Catholic church built at the cost of Mr. Chatto, from the designs of Mr. Hansom. To the student of modern ecclesiology the neighbourhood is an interesting one; Butterfield's church of All Saints, Babbacombe, and Street's, St. John's, Torquay, being fine specimens of their respective architects' style.

PHOTOGRAPHY IN TEXTILE DESIGNING.*

THE preparation of designs for the loom has throughout the history of weaving been regarded as a purely manual process, controlled by the intelligence, ingenuity and skill of the craftsman. It is only natural, therefore, that the invention of apparatus for this specific purpose should have created much interest amongst both British and foreign textile experts. Photography, as understood and practised, appeared as incapable of aiding the artist in the actual painting of his picture as the designer in the transference and execution of the plain sketch of the pattern on to the "scale" paper for the loom. Within the wide range of technical and scientific data in the construction and embellishment of woven fabrics there is perhaps no phase of the work more difficult to assail by mechanical devices than the application and adjustment of the manifold "weave" units which compose all figured textiles. Design acquired in the loom is a distinct style of ornamentation involved in various technicalities It is not the result of one, but of a number of processes overlapping each other, and yet uniting to construct and perfect the same woven effect. Fabric and design have to be simultaneously obtained. These can only be divorced by resorting to the arts of printing, embroidery and painting. Obviously, in the preparation of the "design" sketch for weaving, numerous limitations have to be encountered, which, on a first consideration, seem liable to be increased rather than diminished by a photographic process of design development. Much ingenuity has been exercised by Szczepanik in his solution of these "weave" problems. Szczepanik's apparatus is not for the origination of designs either in the theoretical or technical form, for in both processes the knowledge of the expert are demanded; but its province is to lessen and, in some instances, dispense with the monotonous manual labour necessitated by the present system. There are large areas of point paper in elaborate designs, to which the same weave effect has to be applied, and where some labour-saving device is much needed. Further, in the enlargement of the artist's sketch to scale, there is much mechanical work that it ought to be possible to reduce. The photographic inventions of Szczepanik profess to accomplish these objects, and the designs submitted prove that there are possibilities of success in certain styles of pattern. A new field for experiment has been discovered, the extent of which it is not possible to forecast, but it may reasonably be anticipated that the genius and temerity of the discoverer will prove equal to its more complete exploration.

On the ordinary system of executing woven designs the first work consists in the origination of the sketch, the style of which is determined by the nature and structure of the fabric. This may or may not be brought to scale, but as a rule it is preferable it should be of the same dimensions it will possess in the woven texture. The sketch is now divided into a number of sections forming a multiple of the large squares on the point paper, a process facilitating proportionate enlargement. So far the work is not particularly technical. Both the drafting of the design and its transference on to paper for the loom, without the additional weave details, may be done by the craftsman not *au fait* with the principles of weaving. It is in the selection, adjustment and allocation of the weave elements where the experience and skill of the expert are needed. When the enlargement or drafting on the point paper has been effected, the details have to be applied which make the design weavable, or change it from an outline sketch into a "textile" pattern. The imperfect combination of the weave units, or the combination of those of inappropriate structures, is likely to yield as unsatisfactory results as the development in incongruous colours of an otherwise well planned design. In a word, they may be destructive of the distinctive qualities of the ornamental details. The mechanical and monotonous operations in the whole of this routine are in the enlargement of the sketch to scale and in the repetition of the weaves in its several parts. There are large areas of point paper in all elaborate designs on which the same weave effect has to be marked, and which may be done by Szczepanik's apparatus.

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* A paper read by Professor Roberts Beaumont, of the Yorkshire College, before the British Association.

We cannot but recognise a new field for experiment has been discovered, the extent of which it is not possible to forecast, but it may reasonably be anticipated the genius and temerity of the discoverer will prove equal to its more complete exploration

It is only natural to suppose that the author of this photographic system of preparing woven designs would possess at least some knowledge of the textile arts, but, on the contrary, he is almost entirely unacquainted with the elementary principles of designing and weaving. Szczepanik studied what had to be done, and not the common routine of the processes ; and, ignoring present and past procedures, he devised and perfected a system of his own. His knowledge of physics—in which branch of science he has, from boyhood, been chiefly interested—and his experience in the construction of cameras and other scientific instruments, have, no doubt, suggested the leading ideas of his invention for textile designing.

The preparation of designs by this new apparatus comprises three separate processes :—(1) The preparation of the design on point paper ; (2) the development of the design on this paper ; (3) the introduction of the weaves into the ground and figure according to the scheme of textural development required. The inventor has combined the science of physics and the art of photography in the production of designs for the loom. The sciences of chemistry and engineering have frequently contributed to the development of the textile industries, and several attempts have been made to use electricity in accelerating some of the processes of textile manufacturing. This is a direct adaptation of the laws of physics to the completion of patterns for weaving. The apparatus consists of an optical lantern, in combination with a suitable arrangement of lenses, of a large perforated or multiplying plate, and of small metal slides which have the same functions in this process as type in printing ; and lastly, of weave plates for determining the texture in which each part of the design is to be brought out. These appliances will be understood from the illustration. The light from the lantern passes through a photographic negative of the pattern, entering a pair of lenses between which is fixed the small metal plate of the proper form for producing the marks upon the paper. The parts containing the negative and lantern, as well as those on which the weave and multiplying plates and paper are fixed, are adjustable as to distance from each other.

First there is the photographic method of enlarging the design and also of drafting it to the correct scale for the weaver, which is regulated by the distance of the screen mounted with the paper on which the design is to be printed from the objective lense of the lantern. So far we have only an ordinary photographic enlargement and what may be obtained by the use of an optical lantern simply.

But the essence of the invention consists in dividing this enlarged design into squares and of marking each section in different weaves. Much ingenuity has been exercised by Szczepanik in the solution of these "weave" problems.

The first process is effected by placing in the path of the light emanating from the picture the perforated plate alluded to, and fixing between the lenses through which the picture passes the small metal plates or design type. When there is no negative in the lantern the form of this type is repeated on the paper as many times as there are holes in the multiplier or raster, showing the possibility of dotting every square photographically, on any kind of ruled or weaver's paper, and which may be developed by the process shortly to be described.

In the multiplier there are 435,600 holes, 660 in height and width, and in this way in a few minutes a mark may be printed in each square on the design paper. The division of the paper and the marking of it are evidently feasible by this system. The determination of the portions to be marked and the order of marking are done at different times.

The manner of producing the ruled paper, the theoretical representation of a woven fabric, may now be explained. The perforated plate, with its thousands of holes, has to be used here, as well as in every operation in the development of the design. First, the whole sheet of paper is divided into small squares by introducing a metal plate (skeleton square) between the pair of lenses. By regulating the distance from the object the ordinary point paper is acquired. It requires to have its subdivisions, for, as every expert is aware, to facilitate card-stamping as well as the working out of designs, point paper is ruled with thick lines at regular intervals. These are obtained as follows :—Plates of perforated lines at the proper distances to divide the paper into eights, tens, &c., are placed before the multiplying plate, giving large divisions on the paper previously printed in small squares. If one with the longitudinal lines is used, the paper is only marked lengthways ; with the transverse lines, transversely. The irregular types of paper are got by employing plates with two or more divisions.

The making of the paper is comparatively a simple process, not nearly so difficult and intricate to obtain as the design, in the production of which the same apparatus is used. For every different weave a separate negative and weave plate have to be employed. The design is primarily divided into sections for the different weaves, the negatives being changed in succession for the respective parts ; the manner of accomplishing this is seen in the four sketches. The negative of the complete design is for the development of the ground weave of the paper. When this is one weave throughout it may be obtained in one process. The weaves would cut clearly round the edges of the figure, the system not allowing of any inaccuracies of marking, for mathematically, but not always technically correct, joinings must result from such a system where the ground and figuring weaves are in contact.

In this example it is intended to use four weaves, so that four negatives are employed, the parts to be obtained by each being seen in the illustration. Twill, warp or weft-face weaves might be used, as considered desirable. Suppose, for example, that the details in the upper part of the design are in 8-end weft sateen, the parts beneath or the flowers in 8-end twill, and the remainder in solid floats.

The portions which would appear on the point paper as the result of using each negative are seen in the next illustration. As each negative is introduced the proper weave plate is placed between it and the multiplier, registering the weave on the portion of the design intended for it alone. From the completed sections of this design, forming the next figure, it will be seen that the ground may be weft and the pattern warp effect, or vice versa, and that it is really an exact photograph, but on point paper, and correctly marked, of the original sketch.

When the design has been entirely printed sectionally, it is removed from the screen, placed in the fixing bath, and after drying is ready for the card-stamper.

All designs do not contain the same number of threads and picks per inch. In some instances the fabrics have double the number of threads as picks per inch, so that the pattern would be distorted unless the point paper corresponded. This necessitates the use of paper in which the divisions warp and weft ways coincide with the threads and picks in the texture. By the insertion of metal diaphragms, several grades of paper to meet such desiderata can be obtained. These plates have several openings in them, and each can be marked separately, making it feasible to produce designs for fabrics two or three fold in warp, weft, or both.

A double fabric, for instance, is one in which there are two layers of warp and weft threads, four squares of the paper, equivalent to four threads and picks, being equal to one square, or one thread and one pick of a single fabric. By using a plate which will divide each square into four, and marking each separately, a double weave may be printed. Again, in a fabric twofold in the warp and single in the weft, it is only necessary to divide the square into two in the direction of the warp. Several designs for a threefold weft fabric with a fast woven ground have been satisfactorily prepared by this method, demonstrating its utility in the construction of compound as well as single textures. Another contingency which has also been provided for is the elongation of a sketch either lengthways or the reverse, which is sometimes needed in design preparation.

The practice is to work out designs in different colours, especially when certain sections are intended to be either in a distinct weave or colour in the fabric. The advantage of this is twofold. First, it affords the designer a better idea of the appearance of the pattern when woven ; and second, it facilitates card-stamping, enabling the reader on to see at a glance where there is a change in the weave elements. In numerous instances it is sufficient to have a change of colour to indicate the alteration in the weave. In the new system various kinds of marks are employed instead of diversity of colouring. This has been done in designs in periodicals for some time. Some fifteen years ago I realised the difficulty in articles on design of adequately illustrating them for want of variety of colour, and suggested to the proprietor of one of the textile journals the advantage of various types of marks for printing designs, and a similar idea is utilised in this photographic apparatus. Providing the type is clear the designs are, if anything, better when thus worked out than in those outrageously strong colours, blue, red, &c.—which must have an injurious effect upon the eyes of the card-stamper—commonly used in mill work.

If there is one species of design in which this invention is likely to be more successful than another it is that in which shading is necessary. From those beautiful portraits woven in velvet which are to be seen in the museum at Lyons, and also from numerous examples containing natural forms and colouring with all the gradations of toning, and which have been made in the loom, it is obvious that designs can be so executed on point paper as to yield, when produced in the proper fineness of fabric, works corresponding in delicacy and fineness of shading to those produced by the brush or crayon. But it must be admitted that the manual operation is tedious and difficult to perform. It may allow of a greater diversity of weave varying with the taste of the designer, but it is practically impossible to get corresponding softness of toning which results from using a negative. Here the reflection of the marks in developing the weave on the design is effected by the filtration of light, which suffers in its actinic power from the white to the black portions of the negative. The system of shading by means of sateens is fairly well understood. Thus, if a ten-shaft weave formed the basis of gradation of tone, then there would be a possible nine changes passing by degrees, equal to the fineness of a single thread in the loom, from dark to light, and vice versa. Szczepanik's system utilises the varying powers of light when passing through a negative to print the design on sensitised paper. In printing from a negative, all acquainted with photography know that the light parts are the first to appear, next the toned parts, and lastly the dark parts. It is this process which serves such an important purpose in the selection of the weave, by fixed and inexorable laws, for the shaded design. What is termed a shading plate is used. This is perforated, and contains all the weaves needed for making the numerous transitions from light to dark in a shaded picture. The plate results from combining the weaves which the designer knows to be effective and capable of forming the proper gradations of tone. Other weaves, such as twills, may be employed. From the illustration which has been given in shaded sateens it will be understood that the weave forming the darkest part or which gives the most weft on the face is a compound of all others, and so in this instance the plate itself gives the darkest or most opaque portions of the design. The question arises, How are the effects acquired, seeing that only one plate intervenes between the negative and the surface of the design? As indicated, it is due to the filtration of light. The holes vary in size, and the number of them which produce marks on the design in the period for which it is exposed is determined by the actinic power of light to penetrate them which again depends upon the light toned and dark parts of the negative. Thus, in the darkest parts of the negative only the largest holes take effect, forming as a consequence the lightest parts in the design, and the simplest weave elements are those with the fewest marks. The next power of light combines the largest and the next size of holes forming a second weave.

As the intensity of the light increases it has power to mark a larger number of holes and add to the number of marks in the weave. Seeing that the process of applying the weaves is governed by natural laws, inaccuracies in shading are impossible, for the change in the weave is absolutely identical with the character of the negative, giving a result which, as a shaded design, is decidedly more perfect than could be produced manually. Perhaps it is in the working out of pictorial subjects and highly decorative fabrics, in which natural forms obtain, that Szczepanik's system will be found most useful. It is unnecessary to refer at any great length to the labour-saving effects of this invention. Obviously the process of design preparation will be shortened almost beyond calculation. Designs which now take weeks to execute may by this invention be produced in a few hours. The design of a beautiful silk fabric of a pictorial subject, woven in six Jacquard machines, each of 1,200 wires capacity and each mounted with 43,776 cards, was actually prepared in six hours. More recently, Szczepanik had printed in large type an inscription—"Designs executed by photography and cards stamped by electricity"—which in two hours was not only on the point paper, but being woven in the loom.

In order to understand the ultimate utility of this invention, it should be stated that it is intended to be worked in conjunction with an electrical card-stamping apparatus. It is here where the field of possibilities is widened to an unlimited degree. Objections have been made to designs prepared on this system on the ground that they have not in all points the same character as those worked out manually. The principal difficulty which has been advanced is that the designs have not the same clearness as when drafted by the ordinary method. The practical expert must be the judge in this matter, but it should be observed that the more recent designs are, in this respect, greatly improved upon the original ones. Now that the designs may be placed in an apparatus electrically controlled, which will cut the cards in an incredibly short time, and also, if needed, develop the same in the loom, it is apparent that the union of the two inventions is calculated to effect an undreamt of expedition in design execution. It is not my purpose, at this time, to enter into the details of the card-stamping apparatus, but its province in connection with the photographic system of designing should be understood.

Elsewhere I have emphasised the substitution of marks or "weave" type for colours, but I should observe here that this would not answer the purpose in carpet designing, where the pattern has to be drawn to the scale of the carpet and in the colours in which it is intended to be woven. The capacity of Szczepanik to contrive apparatus which will meet the various contingencies in textile designing is further illustrated by the manner in which he has solved this problem. By the employment of coloured lenses in red, blue and yellow, in combination with the apparatus described, and an ordinary photographic negative of the design, it is possible to print the design on the point paper in the various hues it would possess in the carpet. This process is known as designing in natural colours. If, for example, a photograph should be taken of an artist's sketch, then by placing the negative in the lantern and using in succession lenses in yellow, blue and red, there is produced a replica of the original sketch, but enlarged to scale on the paper for the loom. Another interesting application of this principle of design production in any variety of colours, but with only three hues, is seen in the natural effects produced in the woven fabrics. In a specimen which I am able to submit the beauty and softness of blending the colours by this method is at once evident. Results are obtainable in this way quite impossible in the appropriation of distinct hues for each colour appearing in the texture. The process resembles in its effects those of colour-printing in three primary colours. Szczepanik's invention has been compared in its important influence upon the more artistic branches of the textile industry to the invention of the Jacquard loom, but the latter was simply a natural development or improvement of the draw loom. But here we have an entirely new departure from known principles of design execution. To the technical mind it had never been considered possible to apply the weave details to the design when sketched out on point paper. When, moreover, it is remembered that such details are the distinguishing and beautifying factors of such a wide range of fabrics, especially those of a figured character, it is not strange that any attempt to supersede the manual by photographic processes should be regarded with some degree of suspicion as to their practical utility. The designs and fabrics woven from them which have been made on the apparatus of Szczepanik are in themselves the soundest proof that the new system has come to exist, and not to die a natural death as some have supposed. It is not possible where so much has been accomplished which has hitherto been considered impracticable that the process of perfecting this new system should not continue until its application should be felt in the improvement of the artistic branches of weaving.

The question has been asked, If this invention should become commercially useful (as is already the case to some degree in Germany), will not the sphere of the designer be considerably restricted? This is an unsound doctrine to hold in regard to mechanical and scientific innovations. For a time they may have the effect of dislocating certain branches of employment, but in the long run they enrich the industry in whose interests they have been designed, as well as the community in which they have been adopted. The place of the designer, the brain-worker in textile factories where fancy and decorative textures are produced, cannot be assailed by inventions of this kind. No mathematical or mechanical contrivances or scientific apparatus can be made to achieve what is the work of the designer, namely, to suggest and originate the style, and devise the scheme of construction of all patterns acquired in the looms.

DUNNOTTAR CASTLE.

NO visitor to Kincardineshire, says a correspondent of the *Scotsman*, who has the opportunity should fail to visit Dunnottar Castle, the home for so many centuries of the noble family of Keith, marischals of Scotland, whose members were at the front in every crisis of Scottish history, and of whose deeds Scotland is so justly proud.

The longer one has to give to the visit the more is one repaid for the trouble of getting there. Sitting on the green turf with which the rock is carpeted, on what may have been the pleasure ground of the illustrious inhabitants of the castle, watching the ceaseless motion of the sea and the breaking of the waves as they must have watched them during the long centuries of the castle's existence, the charm of the place completely masters one, vague memories of the past come floating up, as it were, from the waters, and, taking possession of one's imagination, obliterate for the time being all thoughts of the present.

Dunnottar is most easily reached from Stonehaven, from which it is distant only a mile and a half. The favourite approach is by a pathway along the summit of the steep cliffs which encircle the bays into which the coast is here broken up. The rock of Dunnottar itself juts out between two of these bays. It is joined to the mainland only by a narrow neck of land, which the owners of the castle fortress levelled so low as almost to allow the waters to meet over it.

The Keiths, with whose history the castle is inseparably bound up, were a notable family in Scotland long before they possessed Dunnottar. Their hereditary title of Marischal of cotland is said to have been given to Robert Keith in 1010 by ing Malcolm II. as a reward for the killing of his country's nemy, Camus the Dane. A Keith marischal commanded the avalry who dispersed the English archers at Bannockburn, nd gave his life for his country's cause in the battle of upplin. His grandson met a similar fate at Durham, where ing David was taken prisoner. It was not till towards the nd of the fourteenth century that Sir William Keith, marischal f Scotland, handed over some lands in the Lowlands to his on-in-law, Lord Lindsay of the Byres, and obtained in xchange possession of Dunnottar.

Sir William's grandson and successor was created an earl y James II. in recognition of the services he had rendered the ountry during the troublous times which followed the murder f King James I., and thereafter down to 1715, when the last arl George was exiled and his estates forfeited for his loyalty o that king's descendant, successive Earls William and George, arischals of Scotland, ruled in Dunnottar, and distinguished hemselves in the councils and on the battlefields of their ative land.

The Keiths did not, however, neglect their family affairs in heir zeal for the country's weal. By marriage with ladies f noble Scottish houses, by distinguished service and by rudence in guiding their affairs, they so increased their ossessions that it was said of "William of the Tower," ho ruled in Dunnottar in the reigns of James V. and ary, that he could travel from one end of Scotland o the other, and sleep every night on his own estates. he religious troubles of the country did not leave them ntouched either. Dunnottar earned for itself a certain easure of odium on account of the confinement there in 1685, n a sinister looking apartment which may still be seen, and ow called the Whig's Vault, of 167 Covenanters who were arbarously treated, and even tortured, while Dunnottar was n the hands of a deputy-governor, a Keith, but, fortunately for he reputation of the chiefs of the house, not a marischal. We ust not forget to put against this that the preceding Earl arischal had been a Covenanter himself, and had sheltered ithin his walls of Dunnottar many fugitives from the wrath of Montrose and his army, besides having given his brother, who as killed while fighting under Argyle in the Covenanting ause.

It is not known with certainty what buildings existed on the castle rock anterior to its possession by the Keiths, but it is believed that the foundations of the chapel still standing were those of the parish church of Dunnottar, which stood in this situation in the thirteenth century, and was burned by Wallace in 1298, when he stormed the castle, then held by an English garrison. The great tower is the only contemporary part of the building, and it was no doubt the castle taken by Wallace. It was again taken by the English and fortified by Edward III., but was retaken by the National party under Sir Andrew Murray. The importance of Dunnottar Tower as a stronghold remained long, for the Keiths, although resisting King Charles I. on a matter of conscience, took up arms for his son when that king had been done to death by Cromwell's party. Charles II. was magnificently entertained at Dunnottar on his way to his coronation at Scone, and after that ceremony the regalia of Scotland was carried to Dunnottar for safe keeping. The castle was blockaded by Cromwell's army in the winter of 1651, and great anxiety was felt lest the Royal treasure it contained should fall into the hands of the enemy. But by the ingenuity and courage of the wife of the neighbouring parish minister of Kinneff, the precious articles were safely smuggled out of the castle and hidden under the flooring of Kinneff Church till more settled days dawned.

The tower is, like all other towers of the period, designed primarily to resist attack. It has strong walls 5 feet thick, small apartments, little light and every arrangement for security rather than comfort. This and the guardhouse, with its grim embrasures for guns, and the two sally-ports with their defences, serve to remind us that Dunnottar was no mere pleasant place of residence, and conjure up with sufficient vividness the assaults which it has suffered and the attacks which it has triumphantly repelled. But as times became more settled and ideas of comfort and culture softened the fighting spirit, the Keiths, like others, enlarged their dwelling to conform to the new ideas. The rock has an area of 3½ acres, so there was plenty of room to meet the new requirements. The tower was left to the garrison and utilised as barracks for the numerous retainers, while the Earl and Countess and their immediate suite found accommodation in an entirely detached building. This is built round three sides of a quadrangle, in the centre of which is a deep well. The windows not overlooking the quadrangle command a view either of the bays which surround the rock or of the open sea. The apartments have been identified, and, ruinous and roofless though they be, they yet retain a something of dignity and elegance which can only be ascribed to the beauty of their proportions and the fitness of their arrangement. A long, narrow ball-room, with five windows on each side, a drawing-room, dining-room and ante-room, all en suite, make up the public apartments. The apartments of the Earl are built on a rock running straight out into the sea, and comprise a bedroom and library, the very existence of which testifies to the scholarly habits of the family, one of whom founded in Aberdeen the famous Marischal College. These apartments have under them the Whig's Vault, and a still smaller dungeon beneath, where forty-two of the unfortunate prisoners were put to relieve the pressure in the vault above. The Countess's apartments have windows on both sides, and we may imagine bygone countesses sitting in the picturesque dress of the olden time looking out over the limitless ocean, and when overcome with its immensity turning for distraction to the life of the quadrangle.

Of all the bygone countesses who have dreamed dreams at these windows as they gazed out seawards, none lives more fondly in our memory than the last of all her race, the Lady Keith of the Jacobite ballad, whose dream was the restoration of the Stuarts to the throne of their ancestors. A daughter of the Earl of Perth, and a Roman Catholic, she was passionately devoted to the Jacobite cause, and sent forth her two sons, the Earl Marischal and his brother James, to fight in the ill-fated attempt to restore the Stuarts in 1715. Forfeiture and exile followed their participation in the rising, and Dunnottar was dismantled and reduced to its present ruinous condition in 1718. But even in the "wee cross house," to which Lady Keith was then reduced, in which the ballad tells us she toiled "fu' dreary," the spirit of her ancestors and of the historic race whose name she bore was strong within her, and the hope which sprang eternal in the breasts of the devoted adherents of the Stuart cause sustained her, so that the last verse of the ballad is instinct with courage and hope :—

> My father was a good lord's son,
> My mother was an earl's daughter,
> And I'll be Lady Keith again
> That day the king comes o'er the water.

But her king never did come "o'er the water," never at least to stay, nor did ever another Lady Keith rule again in Dunnottar.

Her younger son, after winning for himself a world-wide fame on the battlefields of Europe, met a hero's death as Field-Marshal of the Prussian army on the ill-fated field of Hochkirchen. The elder, after serving his chosen cause at different European Courts, eventually settled at the Prussian Court, where he formed a deep and lasting friendship with Frederick the Great. He was afterwards reconciled to the ruling dynasty, and was allowed to buy back certain of his lands ; but, broken-hearted at the sight of his ruined home, he voluntarily returned to Prussia, where, the last of his long line, he died at Potsdam in 1778.

One may fitly pronounce as eulogy on this grand old family the injunction of the Apostle Paul, "Not slothful in business, fervent in spirit, serving the Lord."

THE LIVERPOOL AUTUMN EXHIBITION.

ON Saturday last the thirtieth annual Autumn Exhibition in Liverpool was formally declared open by the Lord Mayor (Mr. L. S. Cohen). The Lord Mayor said :—The duty of formally opening this Autumn Exhibition is one which I most gladly discharge, for I consider it to be a very great honour to stand here and in the name of the Corporation, of which I am at present the head, invite the art-loving people of the city to come to this beautiful gallery and gaze upon what is a magnificent collection of pictures, drawings and statuary. This Autumn Exhibition is much in itself, but it is more in its potentialities. Over 3,000 works were sent in, and of these about 1,600 may now be inspected by the public. On the walls are displayed the best works of the best artists in this country, and to be able to see them is alike a pleasure and an education. We have, I am told, the pick not only of the Royal Academy, but of all the other leading exhibitions held during the year in London. But in addition to these we produce for the critical inspection of the connoisseur a very large number of works of local artists. It is said sometimes that it is rather more risky to invite the opinion of friends, who may be censorious, than to challenge the judgment of entire strangers. But I hope and believe that we in Liverpool will do our local talent justice. We need by no means be ashamed of it ; on the contrary we have much reason for satisfaction, for pride, and for great hopes for the future. Perhaps I feel all the more kindly disposed towards Liverpool artists because I have the pleasure of knowing a number of them personally, and also because I have just received a very welcome cheque for 100 guineas, the net result of a little Art Union organised by the artists for the benefit of the War Fund. I don't know how the other subscribers fared, but I paid a guinea, and in exchange for it received in due course a most charming oil-painting, by Mr. James Towers, which I should be sorry to part with for ten guineas. I will be perfectly candid and say that much as I appreciate the invaluable contributions of great artists of international reputation, my chief gratification about the exhibition is the result of the local effort contained within these walls. We may depend upon it that the more the people's tastes and instincts are quickened, cultivated and refined, the more certain we, as a manufacturing and commercial nation, will be of holding our own against the world. It is most important that the democracy's ideals should be uplifted and ennobled by such exhibitions as this, giving opportunities, frequent, convenient and cheap, for art study, as well as by our magnificent permanent collection, which so well combines subjects of popular character with works peculiarly delightful and instructive to students and artists. I am particularly delighted to know that special facilities are given for our elementary school children to come here. So much for the influence exercised by the fine arts upon the people; but I would next point out the practical effect of the establishment of such exhibitions in our midst. It leads to the study of drawing and painting; it encourages the formation of art classes; and where art schools are established (such as Liverpool now possesses and has reason to be proud of) it is a most excellent auxiliary. But it is more than an aid to the student. It provides a market for the finished article. We all know how much the autumn exhibitions have done in this respect. We have enriched our permanent collection, of which we are very proud; and while we have done so out of our profits, we have benefited many a struggling and deserving artist. Could we not do a little more to advance local art? I speak with hesitancy, as I pretend to no thorough knowledge of the matter. But it seems to me that it would be possible and desirable for the arts committee to devote a small amount of their surplus income to the purchase of a gold medal to be given annually to any Liverpool student who shall produce the best oil-painting, or water-colour or piece of sculpture. Let us have a Liverpool Corporation art gold medallist It may not produce a distinguished artist every year, but it must provoke effort and that spirit of emulation which is so very valuable in all departments of life. I commend the suggestion to Sir Wm. Forwood and his committee, with one further remark, that as long ago as 1829 the Council passed a resolution that a sum not exceeding 100 guineas be granted to artists resident in Liverpool or the immediate vicinity for the best productions in painting, sculpture or drawing, to be exhibited at the Royal Institution Exhibition. From 1830 this prize-giving was extended to include all artists exhibiting in the Liverpool Exhibition, and was continued annually under the auspices of the Liverpool Academy until 1862. It was the means of making Liverpool a provincial art centre of the first importance, for it attracted to the exhibitions in Old Post Office Place the choicest efforts of the greatest painters of the day. Unfortunately, it was also the original cause of the divisions and dissensions that eventually wrecked the Academy's exhibitions. So my suggestion to the arts committee must be accompanied by a warning note that the conditions surrounding such an award as I suggest will have to be framed with great care. That, however, is not too much to expect from a committee which has Sir Wm. Forwood as chairman, and seems to have a happy instinct for avoiding mistakes. This reference to the past suggests the remark that when we say the Liverpool Corporation was a pioneer in the business of civic patronage of art, we do not state the fact fully. As I have told you, the Town Council first showed an active interest as far back as 1829, and the thirty years or so of prosperity and fame which is the boast of the Liverpool Academy was in no small degree due to the help of the Council When, at last, the Academy's exhibitions had ceased, and Liverpool was in danger of drifting into the background in art matters, our city fathers, by inaugurating these exhibitions, only resumed in a more active manner the responsibilities they had already recognised forty years before. I desire not merely to declare the exhibition open, but to wish for it unprecedented success. We have been passing through trying times, but are now nearly at the end of the war, and we may with hearts relieved enter into the social part of our life as freely as ever, especially into such undertakings as this exhibition. It was only in 1871 that the Corporation began the work we see so prosperous to-day. The pictures, &c., were shown in the Free Public Library, and the total receipts were only 1,523*l*., including commission on sales. I understand that one-half of the pictures exhibited in that collection were sold—a splendid stroke of business for the artists. This beginning has been followed by years of increasing prosperity. I may safely say that more than 2,000,000 people have paid to visit the Liverpool autumn exhibitions. As for the exhibitors during those twenty-nine years, 6,456 of their pictures have been bought at a total cost of 229,000*l*.

The House at Lichfield in which Dr. Samuel Johnson was born having been acquired for the city, the Council have conferred honorary freedom on the donor, Alderman Gilbert.

THE NEW METROPOLITAN TABERNACLE.

THE first of a series of services to celebrate the opening of the new Metropolitan Tabernacle, Newington, re-erected on the site of the former one, was held on Wednesday. The new Tabernacle is erected upon the site of its predecessor, which was burned down on April 20, 1898, but it will not hold quite so large a number of worshippers. In form and appearance the building recalls all the well-known features of the original structure. The first Tabernacle was built in the years 1859-61, by Mr. W. Higgs, and its successor has been erected by his son; the architects are Messrs. Searle & Hayes. The auditorium is 13 feet shorter than the former one, by reason of a larger amount of space being occupied by the Vestry buildings. Mr. Spurgeon's Tabernacle nominally accommodated 5,000 people, and the new one will hold 3,000; but there are now no seats in the aisles, and the area per person is larger than before. A wooden beam passing through a flue was supposed to have been the cause of the great fire by which the previous building was destroyed, and in the new Tabernacle steel and iron have been substituted for wood. The Corinthian pillars and portico remained uninjured after the fire, and the main walls, in fact, were almost as substantial as before. "Spurgeon's Tabernacle" cost 32,000*l*, was insured for 22,000*l*., and was opened free from debt; the new one has cost 43,000*l*., has been insured for 40,000*l*., and will also be opened free from all encumbrances.

A notable improvement has been made in the exits. In place of four stone staircases there are now eight, and instead of fifteen doors leading into the open air there are now nineteen. In the lower hall, where the congregation has assembled since the fire, a great improvement has been made by the removal of classrooms, and the pillars there, which supported the Tabernacle above, have been materially strengthened. The galleries of the Tabernacle present much the same appearance as formerly, the balustrading being of exactly the same pattern and made by the same firm, Messrs. Handyside, of Derby. Throughout the whole seating accommodation has been more generous than before, and the aisles are all wider than they were. There are now provided an enlarged pastor's-room, a room for the assistant pastor, one for the elders and another for the deacons, besides two meeting-rooms and offices. Special baptizing vestries have also been arranged at the back of the platform. The vestries are shut off from the main building by a brick wall, and the rooms are divided by pumice brick partitions. The galleries are constructed with bent plate steel girders; the main girders support a network of steel joists, and the whole is filled in with concrete made of coke breeze and Portland cement, upon which the dwarf walls supporting the staging for the seats are placed. All the floors of the galleries are formed of thick planking, which, it is believed, will resist fire, and thus the use of cross joists of timber is avoided. The roof, which is of intricate construction, consists of steel-framed ribs, which cross the area from side to side, resting upon the main columns, the ribs being arched between the columns to the curves of the ceiling; no rafters are used All the windows have been glazed with tinted glass in lead lights, and the walls are painted a light olive green. Formerly the gas could not be lighted in less than three-quarters of an hour, but now electric lighting has been introduced. The electric lamps are attached to the fronts of the two galleries, and also outline the tops of the Corinthian pillars. The Vestry of Newington supply the electricity, which is of 6,000 candle-power; but in the ceiling there are four sun gas-lights, which may be used in case of a failure of the electric supply. The only record of the fire is upon the panel of a door leading to the upper or pulpit platform. The doorway, which is of teak, was presented by Mr. W. Higgs, and bears the following inscription:—"This building was erected 1861; under the pastorate of C. H. Spurgeon, 1854-1892; destroyed by fire 1898; reopened 1900."

GENERAL.

Mr. A. H. Tiltman has been engaged by the Brighton Town Council to advise as to the utilisation of the site of the Aquarium, and to act as assessor in connection with the competitive designs, at a fee of 200 guineas.

The Health Committee of the Liverpool City Council propose to seek for powers from Parliament to carry out several street improvements, one being the construction of a new street 70 feet in width between Great Howard Street and its junction with Leeds Street, and New Quay at its junction with Queen Street.

Mr. James Henry Fox, the honorary secretary of the Royal Victorian Institute of Architects, and who was much esteemed in Australia, has died at his residence, East St. Kilda, in his seventy-third year.

Mr. Robert Langton, who was well known in Manchester as a wood-engraver, died on Monday at Bexley, Kent, in his seventy-fifth year. He wrote several essays about the early life of Charles Dickens.

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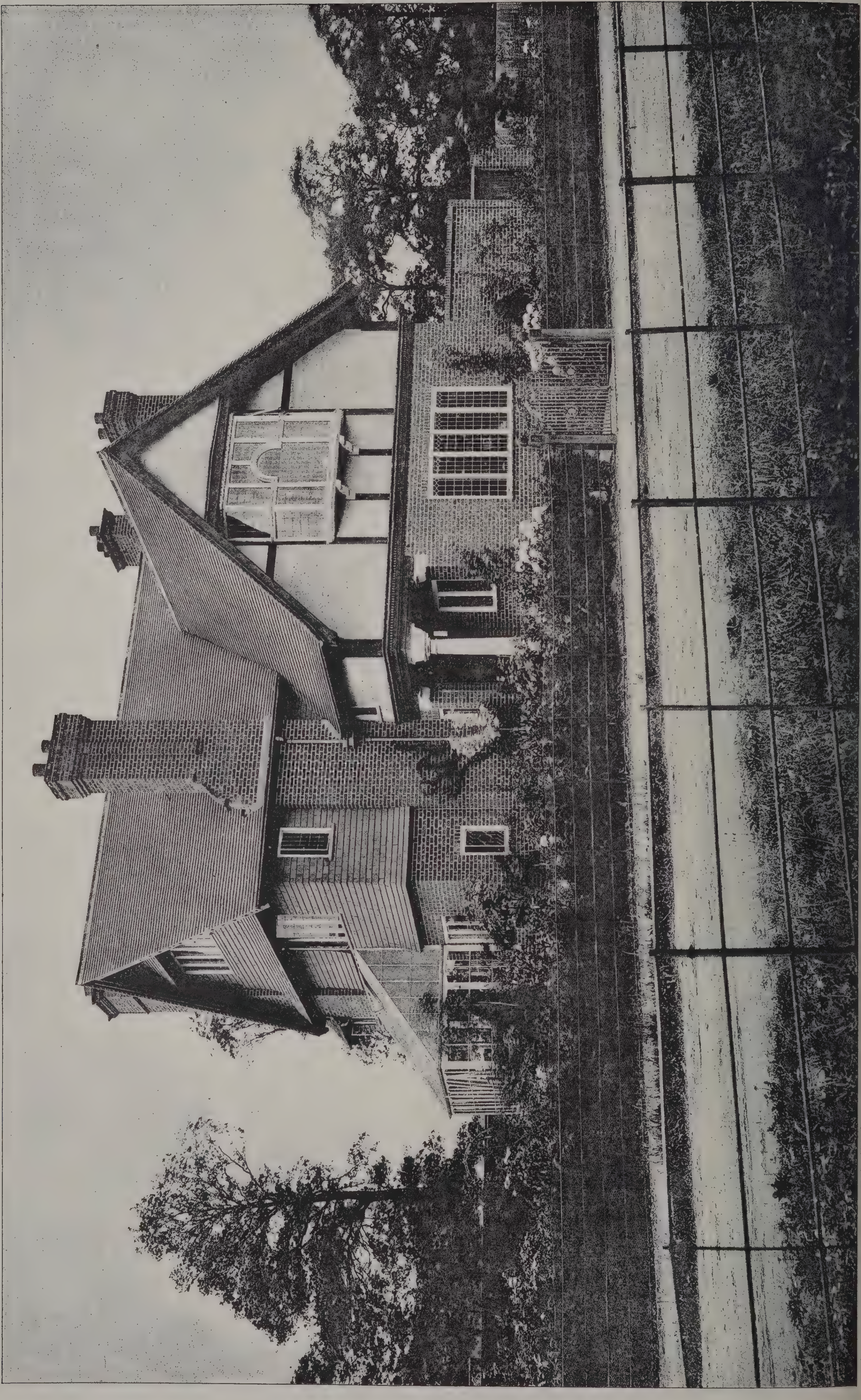
The Architect, Sep^t 21^st 1900.



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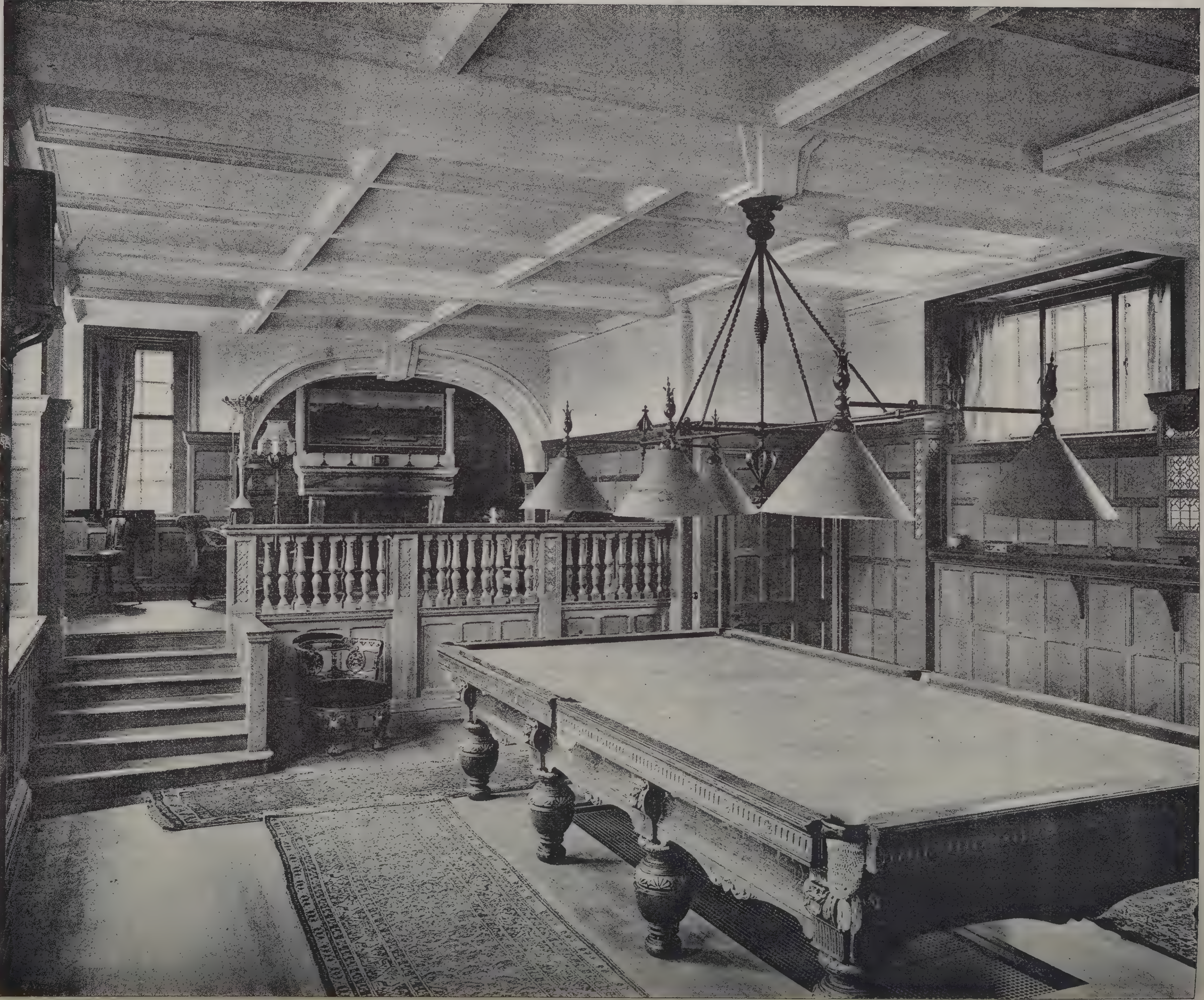

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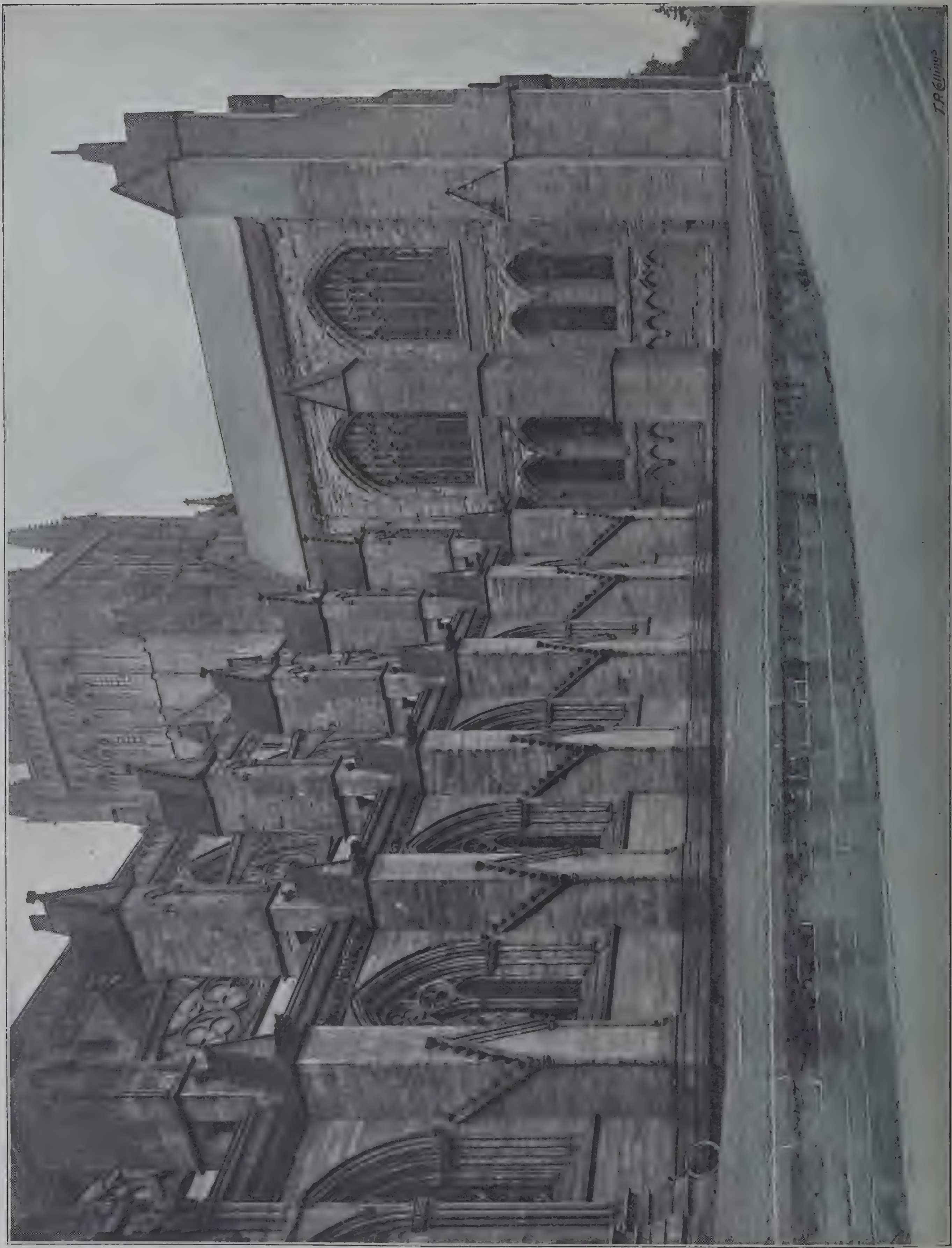

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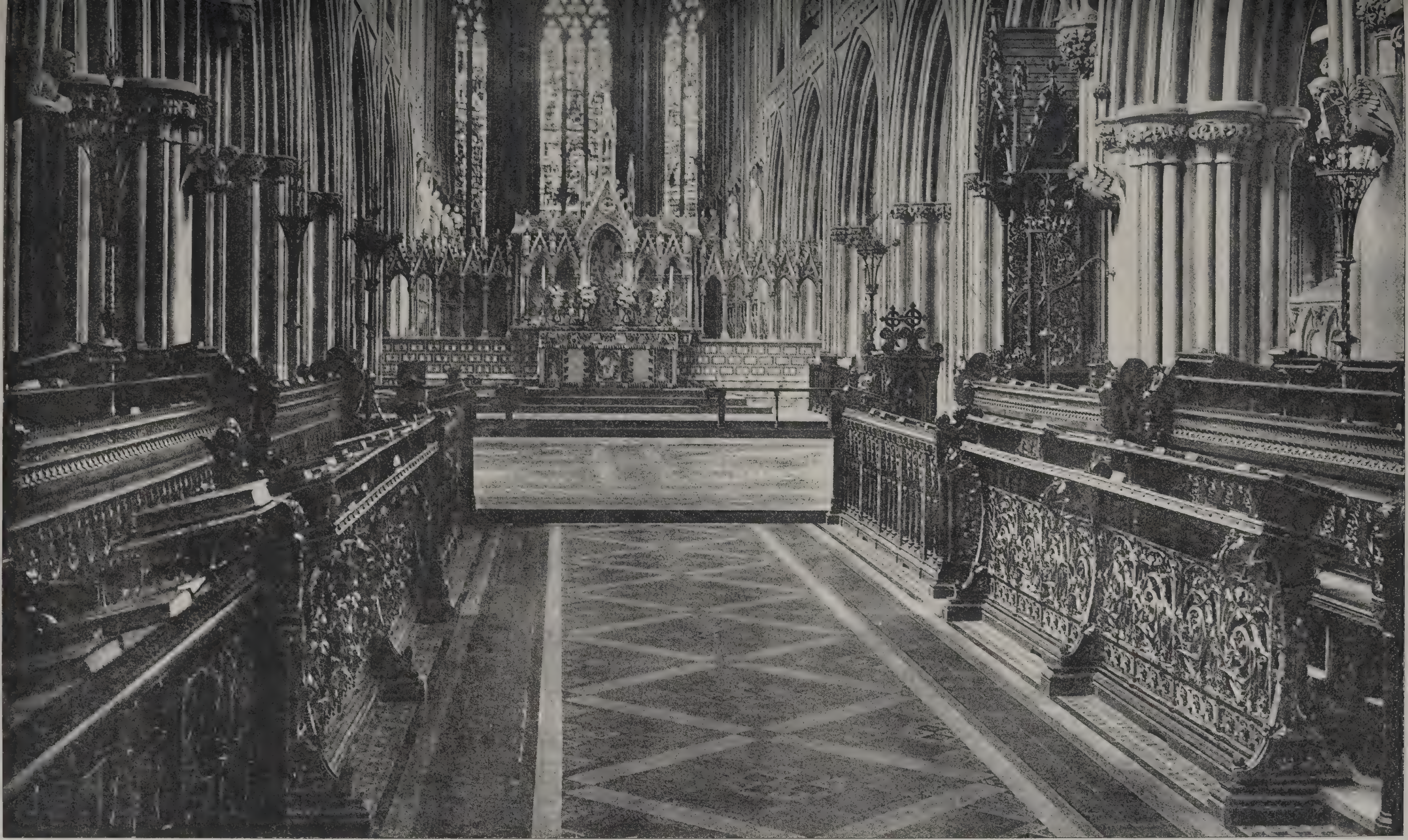

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Cathedral Series, No. 298.—Lichfield: The Choir and Reredos.

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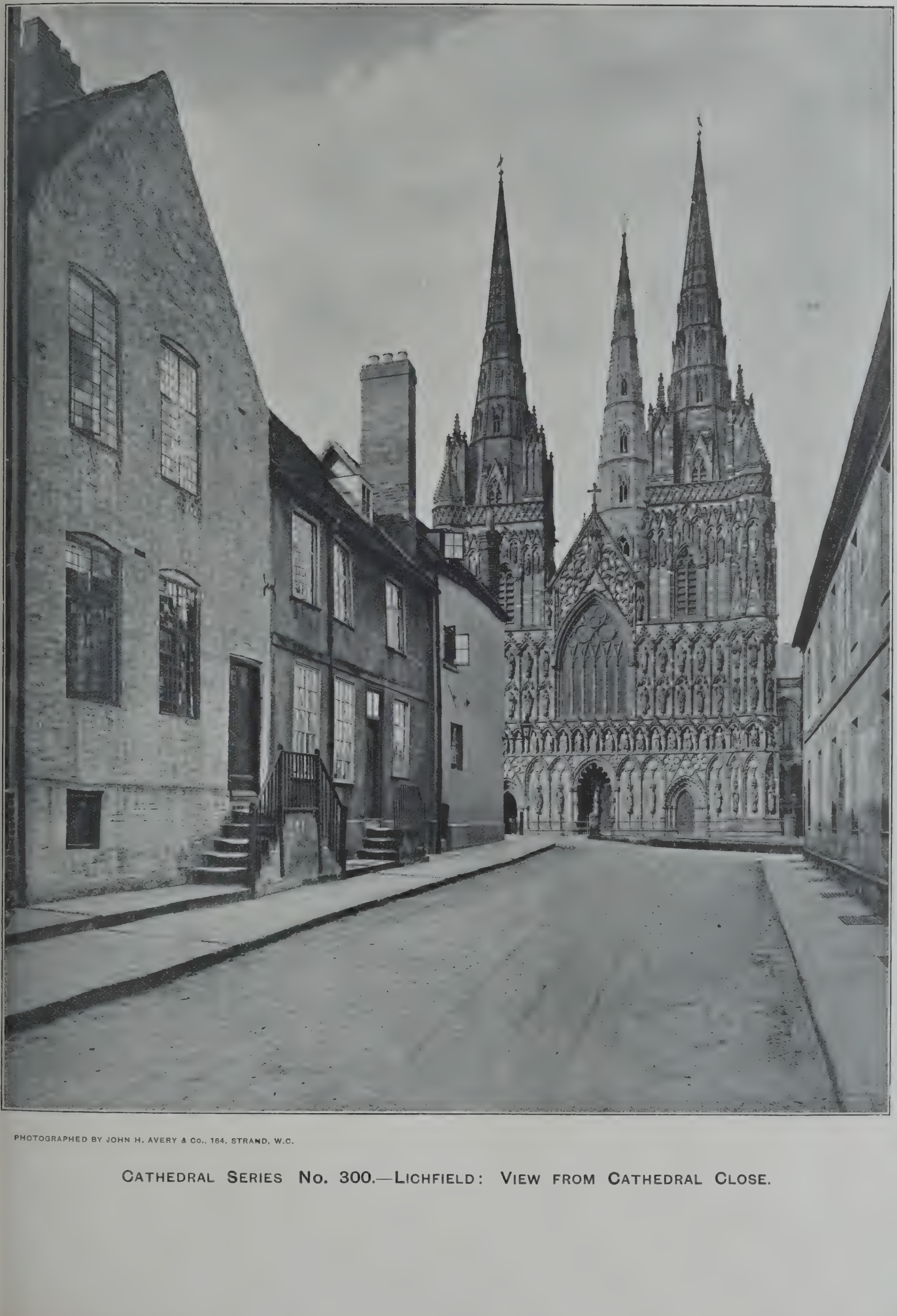

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CATHEDRAL SERIES No. 300.—LICHFIELD: VIEW FROM CATHEDRAL CLOSE.

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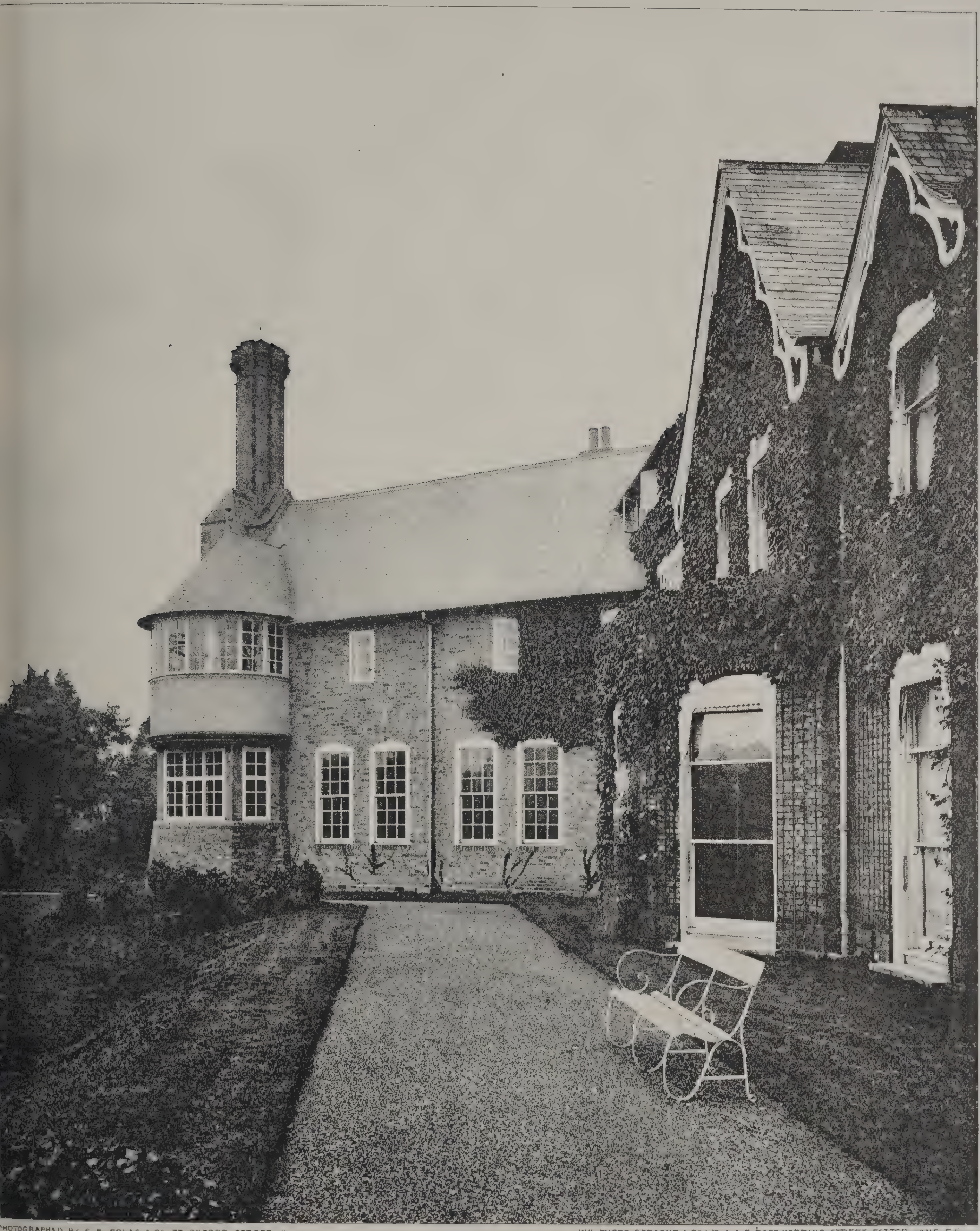

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"BISHOPSFORD," MITCHAM.

H. RICARDO, Architect.

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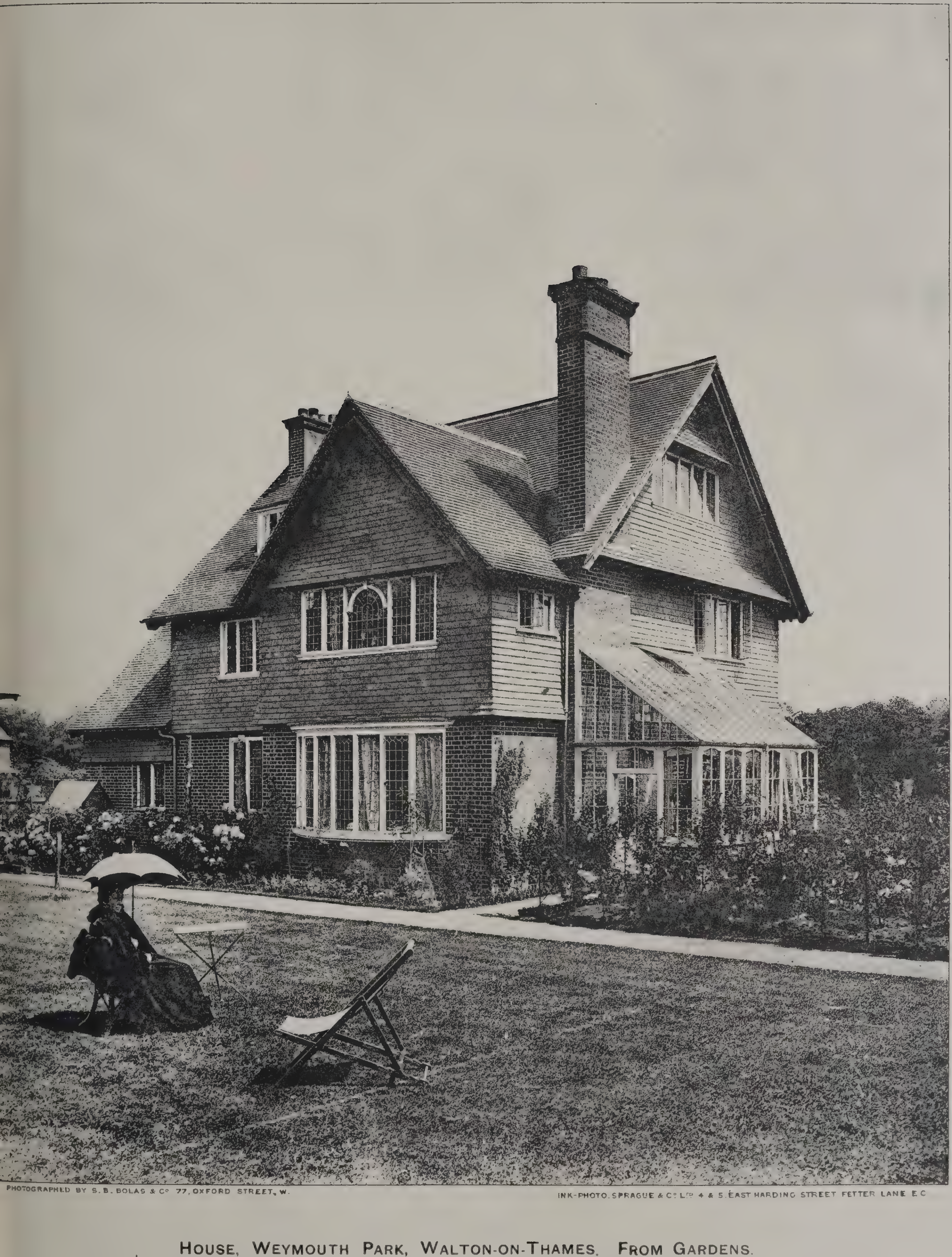
The Architect, Sept 21st 1900.



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HOUSE, WEYMOUTH PARK, WALTON-ON-THAMES. FROM GARDENS.

Messrs. NIVEN & WIGGLESWORTH, Architects.

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The Architect.

THE WEEK.

At the beginning of the year a special committee was appointed by the Board of Management of the Royal Infirmary, Manchester, to consider whether the pavilion system was absolutely essential for the erection of the new infirmary. Letters containing a series of questions were addressed to eminent physicans and surgeons throughout the country. It was found from the replies that Lord Lister, Sir Thomas Smith, Professor MacEwen and Sir William MacCormac thought the pavilion plan was ideally the best form of construction, but considered it quite possible to build a satisfactory hospital on another system. Mr. Timothy Holmes was opposed to the pavilion system. Mr. Howard Marsh believed the pavilion plan not only not essential, but in some respects inconvenient and open to positive objection. Dr. Allbutt and Professor T. Annandale thought the pavilion form of construction essentially the best. Dr. Goodhart, Mr. Treves and Sir Samuel Wilkes expressed no opinion for various reasons. From what was said it was manifest that six of the authorities were of opinion that a suitable hospital could be erected on a plan other than the pavilion. The reappointment of the special committee was agreed upon, with the instruction to obtain plans and estimates for the new hospital "at such time and in such manner as they may deem advisable."

Blankenberghe is not so showy a watering-place as the neighbouring Ostend, but many English visitors give it the preference. The two towns are alike in having a long line of houses to conceal the old-fashioned buildings. Hitherto the principal memorials to be found at Blankenberghe were the models of ships and fishing-boats which were to be seen in the parish church, and which imparted a nautical character to the building. Now the town possesses one consisting of a bronze group and other sculpture, with an obelisk which has been set up opposite the Kursaal, and therefore facing the sea. It is the work of Monsieur W. Charlier and commemorates the loss of two natives of Blankenberghe who were murdered in the Congo territory. One of the figures represents a lieutenant, the other a sergeant. The inscription records how Lieutenant Lippens was stabbed at Kassongo by an emissary of Sultan Sefu on December 12, 1892, and how Auguste de Bruyne, a sergeant of the 2nd Regiment, was assassinated at the same time, having sacrificed his liberty for the sake of his officer. Another inscription declares that Lippens and De Bruyne died as heroes for civilisation. The murders are represented in relief on the obelisk. It is remarkable to see such a memorial in a town which not many years ago was no more than a fishing village. But it will not be without its effect on the hardy natives. In our African campaigns many tragedies have occurred which merit commemoration, but we doubt if any town in England of the size of Blankenberghe would raise sufficient money to give a commission to a sculptor for a costly memorial in stone and bronze. "They manage these things better in France," and it may now be added in Belgium also.

The late Miss Margaret Stokes, who died at Howth, near Dublin, on the 20th inst., demonstrated that women are able to cope with the most abstruse problems of archæology. But the power was inherited. Her father, although one of the leading physicians of Dublin, found employment for his spare hours in antiquarian studies. His life of George Petrie is proof of his familiarity with the new views on many archæological subjects. But the grandfather of Miss Stokes was also an antiquarian as well as a physician, and her brother, Dr. Whitley Stokes, is one of the chief living authorities on the connection between Celtic and Indian languages. The very large work with the modest title "Notes on Irish Architecture" was prepared by Miss Stokes and the Earl of Dunraven. Among other products of her pen are "Six Months in the Apennines: A Pilgrimage in Search of the Vestiges of the Irish Saints," "Christian Inscriptions in the Irish Language," "Notes on the Cross of Cong," "The Shrine of St. Moedog and the Gospel of St. Mogaise." Miss Stokes was selected to write the South Kensington handbook on Early Christian Art in Ireland. Her last work is on the "Sculptured High Crosses in Ireland."

The national wealth is likely to be soon increased by the possession of Tintern Abbey, which through purchase by the Government will pass from the hands of the Duke of Beaufort to those of the Commissioners of Woods and Forests. With the ruins sufficient land is to be acquired to secure the "wild green landscape" from disturbance. Rickman said of the abbey that in beauty of composition and delicacy of execution it yielded to few edifices in the kingdom. Walter de Clare founded the abbey in 1131 for Cistercian monks. The church was commenced by Roger de Bigod, and it was first used for services in 1268. The work therefore exemplifies the transition from Early English to Decorated. Henry VIII. presented the abbey and its lands to the Earl of Worcester. The scenery around the abbey inspired Wordsworth with one of the most charming of his shorter poems. It would therefore be a source of constant regret if so interesting a spot became the property of anyone who would destroy its character, and the Government will deserve much credit for securing Tintern as a national estate.

Bath has set a good example by affixing tablets to the houses in which the two Woods, the architects, lived; for it is not the only city which is indebted to architects for enduring interest. It is strange how little is known about the elder Wood. When he died in 1754 there was no certainty about his age. He began, in 1726, the series of improvements by which Bath acquired its present character. It is easy to understand how a rough-and-ready critic like Smollett, the novelist, failed to appreciate the new crescents, terraces and parades which seemed to be erected only for the genteelest inhabitants; but many other writers have been eulogists of Wood's work. The architect was unable to recognise variety as a necessity in architecture, and he was the first who treated private houses as if they were mere units that would be characterless unless in combination. The neglect of the Woods during so many years is evidence that their principles were not in keeping with that love of liberty which is the basis of the English character. But with the increase of machine-made buildings, it was inevitable that men who seemed to have anticipated so modern a method of construction should again come into favour. Bath is suggestive of mechanical repetitions beyond any city in England, and the machinery was, as it were, set in motion by the Woods. The elder wrote a big book entitled "Origin of Building; or, the Plagiarism of the Ancients," in which he upheld the theory that Classic architecture was derived from the Israelites. But he hardly could claim that his own buildings were entirely original.

In 1891 the rateable value of Cape Town was 2,585,000*l.*, while this year it is 9,020,000*l.* It was not likely that the authorities of to-day would be contented with the accommodation provided by a town-house built 145 years ago. It is, however, significant of the sudden growth of Cape Town that only in the last quarter of a century has any inconvenience been felt through limited space. In 1891 steps were taken towards raising 50,000*l.* for the erection of a more commodious Town Hall. Competitive designs were invited, and in 1893 Messrs. H. A. Reid and F. G. Green, of Cape Town, were awarded the first prize. Owing to the great difficulty of obtaining a site of which all parties would approve nothing was done for some years. But as the lack of proper accommodation was felt more keenly each year, a site was finally selected. The plans had, however, to be somewhat altered, one of the alterations being the addition of a storey. The accepted tender amounted to 96,000*l.*, but owing to a general desire to use stone imported from the Orange River Colony, and as extra depth of foundations was necessary, the total was increased to 122,000*l.* The foundation-stone was laid on August 29 by the mayor of Cape Town, Mr. T. Ball. Messrs. T. Howard & J. C. Scott are the builders.

THE ARCHITECTURAL TRIUMPHS OF THE CENTURY.

We suppose there was no surprise among readers of French newspapers when they saw the statement about the Emperor Wilhelm being an assiduous student of the *Figaro*. His Majesty may have remembered the suggestion which was offered to him by Jules Simon, about the French language as spoken by the Imperial lips having been a little too academic and classical. The language of to-day is not to be derived from the books of the great authors of the seventeenth and eighteenth centuries. It is at its best in the columns of some newspapers, and every day the *Figaro* is as characteristic an example of modern style as any other. The journal has also the advantage of reflecting, as it were, the French spirit. In doing so, it is needless to say, the articles may not be very substantial. Nobody would be astonished to find the *Figaro* of to-day ridiculing the opinions it had delivered in its most assured manner yesterday, and to-morrow one may expect indications of an entirely different system of judging things. But all these transformations impart interest to the columns, especially in the eyes of men like the head of the German States. So long as France is whimsical and is content to run after the "Cynthia of the minute" she is not very dangerous to her neighbours. When notions begin to be reiterated with more or less persistency, then it is time for other countries to look after their means of defence.

The treatment of the International Exhibition by itself affords many revelations of the French mind. At one time it was assumed to be the greatest event in universal history, and all the world was to yield its gold in acknowledgment of French supremacy. Then came a reaction, and the Exhibition was declared to be the most fatiguing of all the myriad bores of life. Modern architects have often to serve like the flogging boys in Mediæval schools which young princes and nobles condescended to attend. The French architects who designed the temporary buildings were in the first place called up to receive punishment which others merited. For a long time the *Figaro* entertained its readers with the shortcomings of the pavillons. But after administering chastisement it was in keeping with French manners to have recourse to the architects, and to ask them to give all the aid in their power for the preparation of articles of a different character, which were to be entitled "Les Conquêtes du Siècle."

It is, of course, admitted that with a subject so vast, the whole of the exhibitors in the International Exhibition would be insufficient to do it justice, but that would be taking the conquests seriously, and the conductors of the *Figaro* are too wise to suppose there is anything on earth which is worth considering in a graver manner than was customary with the Spanish barber whose statue adorns the offices in the Rue Drouot. The spirit of the inquiry is revealed when it is asked, "Who is the man who will hereafter be taken as the representative of the nineteenth century? Will it be Goethe, Hugo, Renan, Pasteur, Edison or Quesnay de Beaurepaire?" Cynics would be sure to say the last-named gentleman is as true an embodiment of the French spirit in 1899 as could be discovered. His posing as a patriotic judge and as the Saviour of France was a new experiment in burlesque performances, and contributed to the hilarity of nations. The *Figaro*, no doubt, expects to be able to draw upon M. de Beaurepaire for some revelations about the most efficient way of exciting risibility, but they also intend to have recourse to men of other classes who have been or are expected to become no less successful in personating the laughing and weeping philosophers simultaneously. It is, however, the *premier pas qui coûte*, and accordingly they almost began their search after the conquests by having recourse to M. Frantz Jourdain.

His selection testifies to the tact of the investigators. M. Jourdain is an architect who has often been be-medalled in France and other countries. But it is possible the prizes were given through fear of the satirist rather than out of admiration for the designer. For M. Jourdain is not only a representative of the new school, and shows a hatred for old fogeyism regardless of the rows of curls it may have round its wig or the number of laurel crowns with which it may be surmounted, but he is always ready to employ the intellectual muscularity which comes from his training as an architect in defence of men who are inspired by a spirit similar to his own. He has shown himself to be one of the doughtiest of the champions of Millet, Manet, Baudelaire, Berlioz, Wagner and Rodin; but it must be owned he is not so eager to seize a dangerous position in order to strike a blow in defence of contemporary architects who have attained success.

It would not have been difficult to anticipate what would be said by M. Jourdain. When asked to describe the architectural conquests of the century, he replied that France, the supposed dictator of laws of taste to the rest of the world, had been taking part in a fancy dress ball during a hundred years. At one time it was Imperial Rome which imparted inspiration to the subjects of the First Napoleon; then came the Gothic of Louis Philippe, or rather of his pious queen, which in its turn gave way to the Renaissance of Napoleon, that also succumbed to the eighteenth century under President Felix Faure, the beloved of the Czar. Whenever there were occasional freaks of liberty they took the form of Pompeian villas, or Châteaux de Blois, or hotels for cheap trippers in the Pompadour style. M. Jourdain hoped that modernity and good sense were at length to have a chance when he saw the Palais des Beaux-Arts and the Galerie des Machines in the Exhibition of 1889. But he was doomed to be disillusionised, for the miles of pastry-cooks and sugar-bakers' buildings which were created to exemplify the applicability of French architecture in 1900 demonstrate that whatever is false has irresistible control over France. We are compelled, M. Jourdain says, to employ in buildings various scientific discoveries, but they are without much effect on architectural forms, for nothing has been devised to impart a decorative quality to a lift or an electric lamp any more than to a telephone or a motor car.

M. Jourdain believes there is a small party of architects who represent modernity, and they are not like mushrooms that suddenly arise after a storm, for they are simply carrying on the principles of Labrouste, Viollet-le-Duc and M. de Baudot. But, he asks, What can they do against the influence of the Ecole des Beaux-Arts, which has endowed Paris with "le terrible Opéra-Comique de M. Bernier?"

The contemporary architects whose works will be treasured by posterity are, according to M. Jourdain, very few. The chief among them is M. Vaudremer, who, although a member of the Institut and a former holder of the Prix de Rome, is as independent of academicism as Berlioz or Delacroix. There is also M. Dutert, who created the Galerie des Machines. Among other architects who have some chance of being remembered are Garnier, whose work is described as a synthesis of the reign of Napoleon III.; Duc, who was conscientious and a purist; Duban and Train. But with the majority there is a lamentable monomania for recopying styles which had disappeared.

One of the rising men among French architects is M. Gaston Redon, who won the Prix de Rome in 1883, and received the Médaille d'Honneur in 1890. What is more important as an aid to success, he can claim Bordeaux as his birthplace, for many people believe the South of France can alone produce genuine artists. M. Redon believes that when reckoning architectural triumphs much credit should be given to such men as Labrouste, Duban, Duc, &c., for they headed the reaction against the ultra-Roman style which was in vogue in their day. As typical examples of the new spirit he cites the Bibliothèque Sainte-Geneviève by Labrouste, in which all the materials play logical rôles, and the Ecole des Beaux-Arts of Duban, of which the details are beautiful. It was in their time logical architecture was born, and it still lives, for in the employment of materials reason continues to exercise some power. When it was suggested that he had not recognised Viollet-le-Duc, M. Redon replied that the "Dictionnaire" was that architect's best work; in many cases his restorations did more harm than good, and when he said "Il faut unifier" he was giving most dangerous advice to those who were experimenting in restoration. His own work was a sort of Gothic neo-Grec. The only restoration of a Gothic building which M. Redon considered to be satisfactory was the Palais de Justice of Rouen, which was conducted by M. Lefort.

M. Redon admitted that the architectural logicians were not always infallible. The desire to express outwardly the character of the interior of a building produced many caricatures. The practice of nature in dealing with the human form should be the guide in such cases; the skeleton is concealed by the muscles, which are covered by the skin, only a few being allowed prominence. To the school credit must be given for the courage shown in the use of iron, of which the Halles Centrales, by Baltard, is an example, although more utilitarian than artistic. At the present time there is a reaction against the display of iron. For example, at the new railway terminus on the Quai d'Orsay the columns are made up of metal encased by stone. In the Grand Palais and the Petit Palais and other Exhibition buildings stone is generally employed to conceal the metallic construction.

M. Redon believes that the education obtained in the Ecole des Beaux-Arts is excellent, but it is owing mainly to the mutual instruction given by the pupils themselves and to the efforts of the various professors to encourage individuality. M. André used to say it was a pitiful sight to see an unlucky pear tree tortured to produce apples, and in the spirit of his maxim he and other chiefs of ateliers have acted. M. Redon firmly believes it is impossible to teach art; the most that can be done is to show the student how he can teach himself. Enable him to be active, that is enough. It should be considered a duty to respect the student's personality, and a true master should, according to M. Redon, when entering an atelier, leave his own personality outside the door along with his umbrella. The proof of the value of the Ecole des Beaux-Arts is to be found in the number of foreign students attending the courses, and in the number of prizes gained by former pupils in foreign competitions. But M. Redon does not advocate the principle of competition, although he admits that the Opera House, the Sorbonne and the Opéra-Comique are all the outcome of competitions; the last-named building is not, according to M. Redon, as unsuccessful as it has been represented, and he believes the interior will soon be recognised as one of the most attractive in Paris.

It was only natural, after hearing so much praise of the new building, that the *Figaro* should seek M. Bernier's opinions about the triumphs of the century. The architect of the Opéra-Comique was willing to discuss triumphs of every kind except those of architecture. The editors, therefore, ask in their disappointment, "Pourquoi diable n'a-t-il pas voulu exprimer ses idées sur son art? Il en a certainement, mais il les garde avec un soin jaloux."

Enough has been discovered by the inquirers to demonstrate that French architects of reputation are not entirely satisfied with the progress of the art in their own country, or indeed of any other. How far their doubts are owing to modesty and to the difficulty of appreciating the work of contemporaries it would be hard to determine. It is certain, however, that no French architect would care to have the Exhibition buildings in their entirety accepted as representing the condition of architecture in France. But in all such cases allowances should be made for circumstances which determined the character of the work. The unsubstantial structures were only intended to serve a temporary purpose, and it was desirable to give them a fantastic appearance as if they were no more than booths in a fair. The failure of the Exhibition cannot reasonably be ascribed to the defects of the palaces if compared with grand buildings, and although the majority can only be considered among the triumphs of the century by scene-painters and other theatrical artists, they are not without interest as suggestions of what French architects desire to construct if liberty were allowed them.

A CLAIM AND COUNTERCLAIM.

A CASE relating to building which occupied three days in the County Court of Brighton, and which required the judge to consider the evidence for two or three weeks before giving his decision, should not be allowed to pass without some notice. Although we have described it as if it were a single case, there were, in fact, two actions, and as the parties were combative there was expectation that both would be heard in the High Court. But as their Lordships were acute enough to realise the difficulties before them they very wisely remitted the hearing to the County Court. However roundabout might seem the circumstances of the litigation, the substantial amount which was at issue was the modest sum of 36*l.* 18*s.* 6*d.* On the other side there was a counterclaim for no less than 5,000*l.*, and their Lordships from old experience knew that when a man who earns a small sum is supposed to become liable to a claim of about one hundred times the amount of his contract the evidence is likely to be most puzzling.

The particulars of the case were curious. Many of our readers are no doubt familiar with the appearance of Colonel Gouraud, who was, and may be still, the English representative of Mr. Edison. It must be acknowledged that the success of many of the electrician's inventions was partly due to the tact of his agent. Colonel Gouraud might with advantage be taken as a model by many of our scientific lecturers. Instead of appearing to stand on an inaccessible height and to speak as an oracle, the Colonel had the happy knack of putting himself in the place of the humblest of his auditors, and from that level gave his descriptions in a way that anticipated all objections which inexperience could suggest. The Colonel is not, however, content with the office of a representative; he has his own ideas of what is possible in various branches of science, and he was quite confident that when his experiments were completed he would be able to enrich the world with novelties which would be profitable to himself and to others.

As he lived in Hove he wished to obtain premises in the neighbourhood which could be utilised for a laboratory and workshops. Hove and Brighton undoubtedly possess a variety of buildings, but it is not easy there, or, in fact, in any town in England, to obtain workshops which are adapted for delicate experiments. Colonel Gouraud should have had his laboratories erected according to his own plans, but we suppose expedition was of importance, and he preferred to make inquiries of house agents. On the books was an entry of premises belonging to Mr. Smale, a builder. They were partly occupied, and it was necessary to have some alterations made in them to suit the especial requirements of Colonel Gouraud. An agreement was entered into on February 7, 1900, by which the Colonel was to have the right to take a lease of the entire premises at the expiration of the first year of his tenancy or sooner, the lease being for six, seven or nine years, and the rent 65*l.*

As is not unusual, there was some dispute about the precise wording of the agreement. In the original draft the words "or sooner" were struck out. It was uncertain when or by whom the alteration was made. But the deletion of the words changed Colonel Gouraud's standing, and without their support it was not easy to see how he could claim damages for any loss arising during the first year of his occupation. It was proved, however, that Mr. Smale, the builder, objected to the agreement because it was indefinite, and to satisfy him a rough plan was introduced, and these circumstances would seem to show that Mr. Smale insisted on a twelve months' certain tenancy and postponed the arrangements for a lease to another occasion.

Mr. Smale was asked to carry out certain alterations. One was the opening of windows by which the advantage of a northern light would be gained. But that could not be accomplished without interfering with the privacy of residences. A window was opened, but after it was completed the Colonel objected to the kind of glass that was employed. He wished to have fluted glass which, while not diminishing the rays of light, would confuse the vision of any curious person who should be anxious to discover the nature of the work on which the tenant was engaged. As the bill for all the works amounted to 53*l.* 5*s.* 11*d.* it was not to be expected that either quality or quantity could be remarkable. A local architect, Mr. Denman, said what was done was good enough, although it might be out of place in a dwelling house. Judge Martineau, with the counsel for the builder and Colonel Gouraud, visited the premises, and His Honour said the work was not only rough, but of an inferior character. We have on several occasions pointed out that there is great risk when a judge undertakes to determine the value of builder's work, or indeed of technical work of any kind. His business is to deal with the sworn testimony of experts and other witnesses. Probably Judge Martineau would have decided against the builder if a letter had not existed in which Mr. Smale was asked to do the work cheaply, as if it were a makeshift. During the progress of the alterations no complaint was made, and it was not until the bill was sent in that any hesitation about payment was shown. The only course left open to the judge was to decide in favour of the builder for the full amount of the balance due, viz. 36*l.* 18*s.* 6*d.*

There had also to be considered what the judge called "a terrible counterclaim" amounting to 5,000*l.* It arose out of a misunderstanding. We cannot imagine that Colonel Gouraud realised the extent of the property which he hired. He intended to devise improvements in motor cars, and he found that a part of the yard, which he believed he had taken in its entirety, was occupied with building materials, and also by the milk cans of a dairy company that tenanted the lower part of the premises. The approach to the Colonel's workshop was found to be a rickety staircase, and it was necessary to substitute a ladder with a handrail. One of the Colonel's assistants stated that while he was standing on the outside ladder the rail gave way, and he was kept in an invalided state for eight weeks. It was also alleged that the noise made by the dairymen in moving the heavy cans was an obstacle to the delicate investigations in the laboratory. The Colonel's "Gouraudphone," which is a very powerful instrument for producing sounds, was affected by the dust, for a grain admitted to the recorder was described to be as much of a disturbance as if a boulder were placed in front of a carriage.

In his decision Judge Martineau declined to recognise that the agreement with Colonel Gouraud was for the whole of the premises. But he considered that the Colonel was entitled to a joint user of the yard, and that Mr. Smale had monopolised too large a share, but as the damages were not serious the amount awarded was only 2*l.* A similar sum was allowed for delay in surrendering a couple of rooms on the lower floor. Costs were allowed to each party in respect of those parts of the suit in which he had succeeded, and Colonel Gouraud will in addition have to bear the cost of the plans and models which had been prepared.

The case suggests how easily litigation may arise out of circumstances which could be satisfactorily settled by a couple of men of business without calling into aid the cumbrous and costly machinery of the courts. There was no definite arrangement or, in other words, no specification of the work the builder had to execute. Then followed the common disappointment with imaginative people who take their own anticipations of what ought to be done as the standard for judging what the builder will do. We should expect more precise notions from a man of science, but it was evident Colonel Gouraud took it for granted that the builder must have clearly understood all his requirements, and had resolved to carry them out to the fullest detail for a small sum of money. It is evident also that in the interpretation of the agreement relating to the tenancy imagination was influential. The American gentleman assumed he was to be sole occupant of the premises, including the extensive yard. There is no doubt that he has suffered inconvenience from loss of time and the worries of a lawsuit, and although he conducted his own case and it was heard in a County Court, the costs will amount to a not inconsiderable sum. The case is therefore one more instance of the danger of a penny-wise policy, for the fees which would have to be paid to an architect or architects would be insignificant if compared with the losses on both sides which are the consequence of the litigation.

PRINCIPLES OF CONSTRUCTION FOR ARCHITECTURAL STUDENTS.

By the late E. Wyndham Tarn, M.A.

(*Concluded from last week.*)

XIII. *Wind Pressure.*

Wind is the most destructive force with which the architect has to contend, especially as regards the higher and more exposed parts of a building; strong gales of wind having a tendency to strip the covering off a roof or blow down a tall chimney-stack which is not sufficiently supported.

The pressure of the wind may be taken as proportional to the square of the velocity with which it travels, and when it impinges on a plane surface. It has been found that a velocity of 35 miles an hour produces a pressure of 6 lbs. per square foot of surface directly exposed to the current; with a velocity of 70 miles an hour the pressure is 24 lbs. per square foot, and at 105 miles an hour the pressure is 54 lbs. per square foot. Probably the highest velocity ever recorded in the British Isles was that of 121 miles an hour, producing a pressure of 72 lbs. per square foot; this was measured at Scarborough on November 29, 1897.

It is a common practice to carry up a brick chimney-stack to a considerable height above the eaves of a roof, and unless supported in some way, as by an iron stay, it is very apt to be blown over in a high wind. Suppose, for example, that a chimney-stack is 10 feet clear height above the eaves of a house roof, and that it contains three flues each 14 inches by 9 inches placed end to end, so that the stack is 18 inches thick and 5 feet wide; then we find, by taking "moments" of the forces about the base of the stack, that a gale of wind blowing at the rate of 58 miles an hour and producing a pressure of 16¼ lbs. on every square foot would overturn the stack about its base. If the flues are placed side by side and the stack is 2 feet thick and 3 feet 9 inches wide, it would require a pressure of 26½ lbs. per foot to overturn it, or a velocity of wind amounting to 73½ miles an hour.

It is on factory chimneys, however, that the wind has the greatest power, since they generally stand alone and unsupported, and are carried up to a great height. Take the case of a square shaft 100 feet high having a uniform width of 7 feet and a thickness of 18 inches throughout. This would be overturned about its base by a pressure of 36½ lbs. per square foot acting directly on one side, the velocity of the wind to produce this pressure being 86 miles an hour. If the average thickness is only 14 inches, it would be overturned by a pressure of 30½ lbs. per foot square, or a velocity of 79 miles an hour in the wind.

The pressure of the wind on an octagonal or a circular shaft is less than that on a square one of the same diameter, that on the circular or cylindrical shaft being two-thirds of that on a square one; and the pressure on an octagonal shaft is four-fifths of that on the square shaft. The resistance, however, is less in the circular and octagonal shafts on account of there being a smaller quantity of material used in their construction.

In the above calculations it is supposed that the shafts are perfectly plumb or upright, but if a shaft is at all out of the perpendicular it will offer much less resistance to the force of the wind.

The pressure of the wind blowing horizontally upon a sloping roof varies according to the pitch of the roof; the pressure per foot on a roof of 60 degs. pitch being three-fourths of that on a vertical plane if the direction of the wind is horizontal, while that on a roof of 30 degs. pitch is only one-fourth of that on a vertical plane. Taking the velocity of the wind at 70 miles an hour, moving horizontally, the pressure on a roof of 30 degs. pitch will be 6 lbs. per square foot, and upon one of 60 degs. pitch it will be 18 lbs. per square foot.

LORD WINDSOR ON RUSKIN.

A Congress of the Ruskin Union was held in Sheffield on Saturday. Lord Windsor, the president, delivered an address, in which he said:—The inhabitants of Sheffield are fortunate indeed to find that their city has been the chosen site for so rich and valuable a gift as the Ruskin Museum. I do not doubt that they appreciate it, and will do all in their power to make it such a centre of instruction in the neighbourhood as the donor hoped for and anticipated. It is sad to think that the life of any great man should be clouded even for an instant by the feeling that he has worked and spoken in vain, or that his was the voice of one crying in the wilderness. If Professor Ruskin ever harboured such a thought he could not have realised how great was really his influence not only in his own country, but also in America, and in all the English-speaking parts of the world; an influence not expressed, perhaps, in loud applause or eager assent to his doctrines, but which has, none the less, created a revolution in the artistic spirit of his time, and has been the chief cause of the increased love and appreciation of art which distinguishes the last from the first half of the nineteenth century.

Any complete review of the life and work of the late Professor Ruskin is beyond my power, and to attempt such a thing would be only to weary you. I shall content myself with saying a few words about what I conceive to be the spirit of his teaching, and to consider it in relation to our own life at the present moment. That I may not stand before you under false pretences I begin with a general confession or statement of opinion to this effect. I do not think the late Mr. Ruskin was infallible, either as an art critic or as a teacher of practical political and social economy. He had not that cold temperament of a critic to enable him to weigh in the scales and to determine accurately the relative merits of different schools of painting and architecture; he was too impatient of the frailty of human nature to evolve any practical rules of political economy, which constantly seem to be based on what ought to be and not what is; but I do think (and I am profoundly grateful for it) that he taught us the great lesson of sincerity and truth in our daily life and work in which, to him, art was an essential element—the channel, so to speak, by which man was to be led up to the higher moral life.

I look to Ruskin as the "seer" and the prophet who, with deeper vision than most men, teaches us the everlastingly true principles of art, rather than to his own application of these principles, which are apt to be enforced by more vigour than fairness. When he is proving his propositions one sometimes perceives exaggeration and a lack of the sense of proportion derived from that keen eye for detail and that analytical mind which, pursuing a point, however small, with almost scientific accuracy, undoubtedly detracted from the value of his judgment as an art critic, and was the cause of those apparently contradictory statements which it has always been the delight of his most shallow-minded opponents to discover and reproach him for. As an instance of exaggeration, I recall the way in which Ruskin sweepingly condemns the conditions of modern life, and because the getting of coal and the manufacture of iron is inconsistent with a clear atmosphere and green fields, he taunts us mercilessly with our inability to note even the form and colour of the evening cloud. Surely we are not all so black as he has painted us. Although in these days of "steaming" instead of "breathing" we must work out our lives to the best of our ability, manage our railways, work our coal and manufacture our iron, without which indeed England's life would be but a futile echo of the past, yet are there many of us, workers too, who can find beauty in the mists of dawn or in the cloud forms and colours of sunset. I only mention these things to show that I am no indiscriminate hero worshipper, who lays aside his own individual opinion or assumes a higher understanding than he really has at the bidding of the master.

I am not going to draw that distinction, which is not infrequently drawn, between Ruskin as the art critic and the social reformer, because in spirit I see none. The same principles which coloured his art criticism led him on inevitably to prove their application to all phases of life. He tells us himself how the theme of his first sermon composed and delivered at three years old, was "People, be good," and to the end of his life, throughout his writings, he will be found insisting that the decay of art at any period of history and in any country was the consequent and not the antecedent of a lowering of the moral standard. "The art of any country," he says, "is the exponent of its social and political virtues." So strongly does he insist on the necessity in the production of all great art of the noblest thought and highest moral sense in the artist, that it was but one step further to consider how man was to be educated, and how he should conduct himself in order that he should earn the name of a true artist and fit himself to leave enduring work behind him. Hence in later life his attention was turned more to social reform than purely to art criticism. But he was really telling the same story, albeit in different language and to other listeners. This particular element in his art teaching has been perhaps more strongly objected to than any other. Those who take art for art's sake as their motto deny that the painter is concerned with moral teaching, or that the choice of subject is of any importance, but that his only aim should be to produce a picture as perfect as may be in scheme of line and colour arrangement, executed with the greatest technical skill he is capable of. I do not know that it is possible to reconcile these divergent views of the proper aims and objects of art, though I am convinced that the difference between them is unnecessarily widened by controversy. This, however, I do think, that the tendency of the modern school, in their devotion to the realities and facts of life which they seek to record and portray, is to lose some of that sense of beauty which I own myself Philistine enough to consider to be an essential element in artistic work that is to live. Preference for the noble thought, a healthy spirit in art, should surely be cultivated, and any tolerance of what is ugly and unclean, that leaves a nasty taste in the mouth, however great may be the technical skill in execution, is surely indicative of some want in the perfect form and roundness of our artistic ideal, and is a denial of the doctrine of the unity of art. Personally, I think that Ruskin, when stating "that all ancient art is religious, and all modern art is profane," makes too much of the outward forms of the Christian religion in their effect upon Mediæval art. Notwithstanding that the historical narrative upon which the Christian religion is based is not and cannot now be interpreted in the same simple sense as it was in the Middle Ages, we have not for that reason, I trust, lost the essence of its teaching, or the earnest striving after the higher life.

It is objected by some later critics that Ruskin's judgment was not to be relied on, that he was carried away by his own feelings to such an extent that his praise and blame loses balance, and that he attributes works to great masters which are found to be only inferior productions of their followers. To a certain extent no doubt this is true, but hardly to the point. Remember that Ruskin really discovered the beauties of early Italian art, so far as the reading public is concerned. Critics there may have been before him, but assuredly they had not the power of making themselves heard, and, although in these faulty attributions we may find, under the guidance of Morrelli and his school, that the lobe of the ear is too long, or the shape of the finger-nail too square, it is most ungrateful to forget that without Ruskin no one would have so much as cared to inquire whether it was so or not. Hence in estimating his value as a critic, let us admit that he first turned people's attention to these works of art, and that it is he who has enabled them to be studied and labelled more scientifically and accurately as our knowledge and appreciation of them increases. Whatever difference of opinion there may be as to his exact position as an art critic, or as to his views on political economy, there is an universal consensus of opinion that as a writer of brilliant and powerful English prose he stands amongst the greatest. Consider the importance of this great gift. He had much to say to us that had to be said, as he tells us in the preface to the second edition of "Modern Painters":—

"It has been written of necessity. I saw an injustice done, and tried to remedy it. I heard falsehood taught, and was compelled to deny it. Nothing else was possible to me. I knew not how little or how much might come of the business, or whether I was fit for it; but here was the lie full set in front of me, and there was no way round it but only over it."

And he said it with a voice that claimed attention by reason of its vigour, its grace and its eloquence. We do not know how many great ideas and noble thoughts have been lost to the world for want of power to express them, but we know to few is given the power to that degree possessed by John Ruskin.

ALLEYN AND THE DULWICH ESTATE.

The Governors who have charge of the college and various institutions at Dulwich are at present considering the selection of a successor as architect and surveyor to the late Mr. Charles Barry, by whom the new schools and other buildings were designed. The value of the property it would now be difficult to ascertain. But compared with the sum paid for it the amount must appear surprising. Those who enjoy the benefit of his gifts have reason to bless the memory of Edward Alleyn, player and proprietor of theatres, who died in 1626, and whose monumental slab is to be seen in the college chapel.

Alleyn was the principal member of Henslowe's Company, and at the same time William Shakespeare was what would now be called a "general utility," for he not only was ready to perform any character which was without a representative, but he could take a turn in the adaptation of plays when Marlowe, Nash, Peel and Greene were not available. Alleyn was not an improvident player; we might say the acquisition of property was with him an instinct. In 1597 Alleyn is said to have ceased acting.

From a memorandum-book discovered by the late J. P. Collier it appears that Alleyn became part proprietor of the place for baiting bears, bulls, horses, &c., called Paris Garden, in December 1594; that his share cost him 450*l*., that he let it for sixteen years at an annual rent of 60*l*., and that in February 1610 he sold it to Philip Henslowe for 580*l*. Thus, besides receiving 960*l*. in rent, at the end of 16 years he obtained 130*l*. by his bargain. The matter is thus stated by Alleyn himself in his memorandum-book, which is a small thick octavo volume of some 600 pages, most of which are not written upon:—

What the Bear-garden cost for mine own part in December 1594.

First to Mr. Burnabye	£200
Then for the patent	250
Sum is	450
I held it sixteen years, and received 60*l*. per ann., which is	960
Sold it to my Father Henslowe in February 1610 for.	580

Another transaction relates to the parsonage of Firle, in Sussex, in which it is clear that Alleyn once had the property, although even the memorandum-book does not make it clear when he acquired it. An agreement was entered into for the sale of Firle to Arthur Langworth for 3,000*l*, to be paid in twenty years. This bears date in 1596, but Alleyn had originally purchased the parsonage from Langworth. The entries there found run as follow :—

What the parsonage of Firle cost me (in all) of ready money, or other ways :—

	£	s.	d.
First to Mr. Langworth	1066	13	4
Three years forbearance : the last payment lost, which he should have paid	66	13	4
I gave him at last parting	70	0	0
With two bonds of	30	0	0
My charges for conveyances and law	10	0	0
Which is in all, without allowance for three years forbearance	1273	6	8
So in all it cost	1323	6	8

This sum of 1,323*l.* 6*s.* 8*d.* was the price Alleyn paid for it to Langworth prior to 1596. The preceding account is followed by a statement of Alleyn's receipts from the parsonage while he held it.

What I received of it :—

	£	s.	d.
Five payments from Arthur Langworth, 100 marks : a payment half-yearly	333	6	8
For one year's crop to Page	100	0	0
For four years' of Mr. Roots	440	0	0
	873	6	8
Sold this Parsonage to Mr. Homden and Mr. Bunce about Christ. 1605 for	1,300	0	0

Alleyn therefore kept the parsonage of Firle until 1605, when he disposed of it at a loss of only 23*l.* 6*s.* 8*d*, and had received from it, while in his possession, the sum of 873*l.* 6*s.* 8*d.* It follows that the agreement for the resale to Arthur Langworth, in 1596, was never carried into execution, and that Alleyn retained the property for nine years afterwards. Further on in the memorandum-book are some notes thus headed, "The Writings of Firle," and these notes show how the property came to Langworth, through the Sackville family.

It cannot be determined whether the 1,320*l.* expended by Alleyn upon the Fortune Theatre in Golden Lane, Cripplegate, was for his sole share of the theatre or the entire cost of the building, in which Henslowe was Alleyn's partner ; we learn, however, that Alleyn bought the inheritance of the ground on which it stood on May 30, 1610, the playhouse itself having been built ten years earlier.

In the "Memoirs of Edward Alleyn," Collier says that he had "exchanged some property at Kennington with Sir Francis Calton in completing the bargain for Dulwich." From Alleyn's memorandum-book the important fact in his history is revealed that as early as 1604 he had become lord of the manor of Kennington, for which he gave 1,065*l.*, and which he disposed of to Sir Francis Calton five years afterwards for 2,000*l.*, thereby making a clear profit of nearly 1,000*l.* In speaking of these sums, let it be recollected that 1,000*l.* then was equal to nearly 5,000*l.* now. No wonder, therefore, that Alleyn's wealth increased rapidly, and that, in his own words, "God blest it with him." The items referring to Kennington are entitled :—

What the manor of Kennington cost me, Novemb. 1604.

First to Mr. Skevington, for the lease in possession . . .	£660
Then to Tho. Webber, for the lease being in reversion . .	405
So in all . .	1,065
Sold this manor of Kennington to Sir Fr. Calton, knight, the 1st of Septemb. 1609, for	£2,000

From the same curious relic (which is wholly written by Alleyn) we are able to ascertain the year when he became lord of the manor of Dulwich, and to trace the gradual acquisition of property there by the founder of "God's Gift College." Every date of every purchase, with the price paid and name of each person to whom it was given, is duly recorded.

Alleyn bought "the lordship of Dulwich" of Sir Francis Calton in 1605 for 5,000*l.*, of which he paid 2,000*l.* down, leaving 3,000*l.* as it were upon mortgage, and paying 213*l.* 6*s* 8*d.* per annum "for forbearance," or, in other words, for interest ; he did not complete the purchase, by paying the last instalment of the 3,000*l.*, until October 25, 1613. These facts are thus registered by Alleyn :—

In no[mine] do[mini] Amen. Anno 1605.

	£	s.	d.
Bought the lordship of Dulwich of Sir Francis Calton, knight, this 20th of October for	5,000		
Whereof 2,000*l.* is paid in hand, the other 3,000*l.* at the end of six years, with consideration yearly for forbearance of the 3,000*l.*, the sum of	213	6	8

Paid Sir Fr. the said sum of 3,000*l.* at several payments, and the last on the 25th of October, 1613.

From the "evidences," a list of which follows the above memorandum, it appears that the ancestor of Sir Francis Calton obtained a grant of the manor from Henry VIII. at the dissolution of the monasteries, and that the property had at one time been mortgaged to Sir Robert Lee, Lord Mayor of London.

From this date Alleyn seems to have set himself to buy up the separate property of individuals, whether copyhold or otherwise, within the manor of Dulwich. On June 1, 1606, he purchased a house and 5 acres of land of Thomas Emerson for 230*l.* ; and on July 3 following he became owner of "Hethersall's house" and 32 acres of land, for which he paid Thomas Calton 300*l.* On October 16, 1606, he bought "Berry's house and land" (13 acres) for 231*l.* ; and in the next month he paid 92*l.* for a tenement and 9 acres of land which had been occupied by John Ewin, and 231*l.* 13*s.* 4*d.* for Thomas Turner's house and 13 acres of land. On June 1, 1607, he acquired "the corner house in Dulwich" and 16 acres of land by purchase from Thomas Calton and his wife and Henry Farr and his wife, but the sum he paid for it is not stated. On October 22 of the same year he gave 400*l.* to Ellis Parry "for all his lands in Dulwich," and in the same month of the year following (1608), he gave 50*l.* to Thomas Calton for some interest he had in "Little Brownings" and "Carter's Garden." On December 13, 1608, he made a very important purchase of "all Sir Edward Bowyer's lands," &c, in Dulwich, consisting of "about 70 acres and eight or nine houses," for 1,650*l.* Alleyn did not make any fresh additions to his estate until November 25, 1611, when he paid 510*l.* to Thomas Calton for Carter's Hall, Great Brownings and Addington's meadows, containing in the whole 26 acres. On November 2, 1613, he gave 160*l.* to Sir E. Duke for 17 acres of land, and on June 1, 1614, two persons of the name of Shillingford received from him 16*l.* for their share of "the Blue House" in Dulwich.

We see therefore that, including the original purchase of the lordship from Sir F. Calton, Alleyn gave no less a sum than 8,870*l.* for his estate in Dulwich before he built his college there ; supposing he paid a fair price for the houses and land, his property in Dulwich alone would be worth not far from 45,000*l.* at the present value of money.

But this was by no means the whole of his possessions, as we find upon the same conclusive evidence, and putting out of view his large pecuniary interest as sole owner of the Fortune Theatre, his houses in the Blackfriars (including probably the playhouse) and Paris Garden, which wholly devolved into his hands after the death of Henslowe. Besides these, he had valuable houses and ground in Southwark, including that on which the Rose Theatre either stood or had stood, a "wharf in the Close," as Alleyn calls it, and leasehold property held under Lord Montague. The memorandum-book also includes a list of "the deeds of my houses in Bishopsgate Street," which he had derived from his father. We know also that he was the owner of dwellings and land in Lambeth Marsh, though the book is silent regarding them ; but it contains one notice of which we find no other trace, viz. that at one time (no date is inserted) Alleyn was owner of a tavern called "The Boar's Head." No doubt it was a common sign, and it might be the inn in Bishopsgate which his father had kept, but the very name carries us with a sort of magical attraction to Shakespeare and his plays. On the whole, Collier said he was disposed to value Alleyn's property at the period when he commenced Dulwich College at not far short of 100,000*l.* of our present money.

GLAZING OIL-PAINTINGS.

SOME correspondence has appeared in the *Manchester Guardian* relating to the protection of oil-paintings by glass, apropos of the injury to one of the pictures of Madox Brown in the Town Hall.

Mr. Charles Dyall, curator of the Walker Art Gallery, Liverpool, writes :—

For nearly a quarter of a century I have been the custodian of the Liverpool city collection. Soon after my appointment, in 1877, I received a letter from the late Sir John Gilbert, R.A., whose fine picture, "Richard II. Resigning the Crown to Bolingbroke," had just before been purchased by the Corporation, advising me most earnestly to cover all oil-paintings with glass as the best and only means of preserving them from dust and the variations of the atmosphere. The surface dirt may be cleaned off from time to time, but nothing could prevent dirt from accumulating in the brush marks of the painting, which it was impossible completely to remove by sponging or attempts at cleaning of any kind. I have steadfastly followed Sir John's advice ever since, so that now all the most important pictures in the collection under my charge are glazed and look as fresh, or may easily be made so, as when they left the artist's easel. The advantages are obvious. The works are saved from wilful injury, glass tones down any coarseness in the technique, heightens the delicate tones, and more than all, gives atmosphere and reality to the subject, whether it be figure, landscape, or portraiture. The only disadvantage that I know of is that reflections of outside objects are seen, especially in dark pictures, but these are easily evaded by the onlooker changing his position and looking only at the picture and not at anything reflected. This drawback is far outweighed by the vast improvement effected by glazing. I firmly believe the admirable frescoes of the Town Hall only need this protection, and I confidently recommend that glass be adopted in all galleries open to the public.

Mr. Frederic Shields says:—The expression of Mr. Dyall's opinion that all oil-paintings in public buildings or galleries should be covered with glass is entirely without relevance to the adoption of the like treatment in the case of the Town Hall decorations, which are not executed in oil-colours and, though not the true fresco of the Italians, may yet fitly be classified as frescoes, since most of them are painted on the very stucco ground of the ancients, its absorbency being an essential condition, so that the pigments become united with and an integral portion of the wall surface, thus forcing the artist into much the same direct technique demanded by true fresco, but with greater liberty in manipulation and (I quote Professor Church) "greater permanence under adverse atmospheric conditions," and the mat surface that characterises Madox Brown's work. For these qualities Sir Frederic Leighton used the Gambier-Parry method in painting the two large lunettes of "Peace" and "War" in the South Kensington Museum.

It ought not to be necessary to insist that the primal, indispensable quality fitting the Gambier-Parry process for wall-painting is its perfectly mat fresco-like surface, absolutely opposed to the oily or varnished surface of oil-paintings, though even in oil-painting its noblest practitioners abhor gloss, Rossetti and Watts, to name no others, being ever solicitous to realise a mat surface as far as oil pigments will permit. The superimposition of glass destroys this beautiful quality, as preferable to glaze as grapes with their fresh violet bloom to the same fruit burnished by passage through the rude hands of costermongers. But since Mr. Dyall so earnestly advises that these frescoes should be put under glass, suffer me, sir, to use this opportunity, even though all the curators of public galleries oppose me, of protesting against the dominant craze for conserving gallery pictures. It is indisputable that the beginning and end of a painter's motive in his work is that it should be seen—seen as a whole, not in interrupted parts—and seen clearly, not through any disintegrating medium (glass, through its reflections, is such a medium); and the curators who place paintings under glass grossly violate this motive and, under the plea of preserving them for futurity, hinder all true sight and enjoyment of them in the present, and then complacently plume themselves on their wisdom. I do not, of course, include reference to water-colours, which, from their greater luminosity and usually small scale, suffer less from glazing.

But Mr. Dyall's own admissions are condemnation sufficient. He allows that the reflections of neighbouring objects, especially in the case of deep-toned pictures under glass, compel the irritated observer to dodge about in painful endeavour to gain any point at any distorting angle of vision whence he can view the picture with the minimum of disuniting reflections. He honestly admits that the darker portions of the picture are transformed to mirrors, and it follows that the unity of tone which is the painter's final triumph is totally destroyed—I repeat, totally destroyed. I have bitterly in my mind my latest visit to the National Gallery, when I found a much-loved picture had been lately glazed. To study the exquisite deeps of its colour-tones is no longer possible, and the play of contrast between the loaded handling of the high lights and the sweetness of the half-tints and shadows is almost obliterated. Yet Mr. Dyall claims that this burnishing effect of glass is an "advantage." "It tones down any coarseness in the technique," that is, the surface of the picture is flattened, robbed of the infinite playful variety of loaded and thin painting with which a great executant quickens his canvas. So the polished tastes of dilettante and art curators are indulged at sore cost to the studious lovers of art. Students who essay to copy a picture under glass experience the difficulty of seeing it in the most exasperating fashion; and so entirely is this conceded that at the National Gallery the glass panel is unlocked and thrown back to permit clear vision of the subtler qualities of colour and tone when the copy is nearing completion.

A few peaches were given me yesterday, a feast to my eyes—a sweet feast to my eyes, with their tenderly tinted velvet bloom uninjured. Haply I might long preserve them from decay, if I could protect them from the air within some vitreous medium, but at the expense of their lovely mat bloom. But no. The end of a peach is to delight the palate, and of a picture to give present joy to the eye's taste; and it should be subjected to no treatment that interferes with its true end. If Dante Rossetti's magnificent "Dante's Dream" in the Liverpool Art Gallery, composed of the richest harmonies of lusciously deep greens and purples, has been subjugated under glass, no visitor can obtain even a remote idea of its glory when visible enfranchised.

I find it impossible to let pass Mr. Dyall's amazing dictum, among the advantages he claims for glass, that "more than all" it "gives atmosphere and reality to the subject." It taxes the uttermost of the greatest painters' knowledge, invention and skill to "give" these qualities. But should he have failed in these supreme aims, here is a magical formula indeed, a necromantic mirror that shall aboundingly fill up all his poor work's lack. A sheet of glass is superimposed, and lo, the picture palpitates with "atmosphere and reality." Yet the amazing claim holds good. But the gifts of reality are projected from the spectator's rear; every object there, fixed and moving, the opposite wall and every framed picture thereon, the pattern of the marble or mosaic flooring, every transient gleam of light and every passing visitor, especially those clad in pale dress, are mirrored in and traverse the vexatious glass, to the pitiful obscuration and confusion of the "atmosphere and reality" of the picture itself.

In another letter Mr. Dyall writes:—Mr. Shields remarks that my recommendation that all oil-paintings in public galleries should be covered with glass is without relevance to the Town Hall frescoes, because they are not painted in oil, but in some other medium. This makes no difference whatever. Something seems to have gone wrong with the frescoes, and Professor Church and Mr. Shields were called in to do something to protect them from the "smoke-laden atmosphere of Manchester." Now it appears that something is required to protect the protection and to preserve the works from wilful damage. Someone, very wisely I think, suggested covering them with glass. I saw Madox Brown completing the last of the frescoes in his studio, and from what I remember of this and the others I feel convinced that glass is exactly what they want, and would supply the necessary protection and preserve them from wilful injury. No attendant is endowed with unremitting watchfulness, even at 25*s.* a week and uniform, but glass insures the necessary safety.

Mr. Shields in his letter soon leaves the unfortunate frescoes to their fate, and merges into the question of the effect of glass upon pictures generally. In my last letter I quoted the late Sir John Gilbert in support of my case, and the following extracts from his letters to me and my late chairman on the subject may prove interesting and instructive:—

"Vanbrugh Park, Blackheath: December 22, 1876.

". . . It has been my desire to write to you about the picture when the time arrived to place it in the permanent gallery. I have already expressed the great pleasure I felt at its being so placed, and in my anxious desire that it should remain for ever, preserving as much as possible its freshness, tone and colour, I strongly urge the desirability of its being covered with plate glass. It will preserve it in every way. Loaded as it is, in parts, with colour into which rich "glazings" are worked, it presents here and there—the gold robe of Bolingbroke, the crown, dress of foremost man kneeling, and other parts—a rugged, uneven surface, which in course of time, if unprotected, is filled up with dust and dirt difficult to get out. All pictures in public galleries should be glazed for this purpose alone, not to say anything of the depth of richness thereby added to the whole work."

"Vanbrugh Park, Blackheath: July 23, 1877.

". . . My anxiety is that the picture should be kept safe from the many harms which a work of that kind, painted solidly with much texture, and variety and inequality of surface, glazed and toned to the greatest richness I could get, is liable to injury if continually exposed to all the varying influences of heat and cold, of dust and damp of a picture gallery, rendering necessary repeated rubbings and dustings, which can never remove dirt that settles in all the little hollows upon the surface. . . . Upon you, who are the curator of the galleries, I now beg earnestly to press this consideration."

Mr. Shields waxes poetical and eloquent on Dante Gabriel Rossetti's great picture, "Dante's Dream," and he says, "If this magnificent work in the Liverpool Art Gallery, composed of the richest harmonies of lusciously deep greens and purples, has been subjugated under glass, no visitor can obtain even a remote idea of its glory when visible enfranchised" (by which, I presume, is meant unglazed). This is simply pure sentiment that has no foundation in fact. I have seen this beautiful picture "enfranchised" many times, and I can assure Mr. Shields that its beauties are vastly enhanced by glazing, and Mr. Shields will perhaps be surprised to learn that the great artist, who may be supposed to have known how his work would look best, stipulated in the strongest terms, when the picture was purchased for our gallery, that it should be shown under glass.

Mr. Shields, with, I fancy, a covert sneer, defies and counts as naught the opinion of all the "curators" in the country. I am speaking by the light of experience and observation, supported by what I regard as very high authority. At a very respectful distance I admire, with Mr. Shields, the subtleties of artistic work—"the tenderly tinted velvet bloom of peaches," "the exquisite deeps of colour tones," "the loaded handling of high lights and sweetness of half-tints and shadows." It is to preserve all these fine qualities in pictures that I, in common with the authorities of the National Gallery, desire to preserve them for future ages from the "smoke-laden atmosphere" of towns, where their delicacy would soon be destroyed.

NOTES AND COMMENTS.

At a meeting of archæologists at Kentmere, in the Windermere district, Mr. W. G. Collingwood was enabled to describe from a couple of fragments the character of an ancient cross which about 1,200 years ago stood near the abbey of Carlisle. The two fragments were discovered in the course of alterations to a house near the cathedral. They are of red sandstone, each 9 inches in height, 4½ inches thick and 5½ inches broad. The carving is in relief and neatly chiselled. The fragments were the lateral arms of a cross, which must have been very like the Fratry cross-head in general form, also in having an interlaced pattern on the ends of the arms. This interlacing, however, is in straight lines, but there is something like it in an Anglian cross from St. Oswald's (now the cathedral library), Durham, and, though open in design, is not irregular, as Norman interlacing often is. In the knobs on one face this cross is like that at the cathedral, Carlisle, which, with its knobs joined by raised lines to a central boss, may have been the original pattern of the white cross-heads at Beckermet (St. John's), at Bridekirk, at Crosscanonby, at Dearham, and at Kirkby Stephen, which must all be rustic imitations of the good Anglian work at Carlisle. The zigzags round the knobs, which at first seem rude and formless, turn out, when the whole head is restored from the fragments, to be irregular only in order that they may follow the curves of the spaces they have to fill. These zigzags are a cheap way of getting the effect of key pattern; they are most unusual, but must be a development of Anglian art in rather a late stage. In a later and more debased stage they are replaced by the wandering spirals of the well-known Cumbrian type, as in the head of the so-called Kenneth cross at Dearham. The free-armed head is probably Anglian, as opposed to the Irish wheel-cross, a later type. The Anglian character is distinctly seen in the reverse, with its leaves and fruit degenerated a little from the Anglo-Italian scrolls of the Bewcastle and Hexham types. We may perhaps find a date for this cross from the fact that the Anglian occupation of Carlisle began about 680 A.D., and ended with the destruction of the city by the Danes in 876. This is evidently not a work of the finer and earlier time, so that it may be roughly placed at about 800 A.D. It seems from these fragments to have stood in fair preservation until it was intentionally mutilated. By knocking off the fragments a long through stone would have been got by the cathedral builders some 400 years after the cross was set up, and we know how often the older monuments were used for building purposes.

The Cistercian abbey of Altenburg is considered by German archæologists as not unworthy to be classed with Cologne Cathedral. The rule of the Order made simplicity in buildings a necessity, and the principle is exemplified in Altenburg. The church was founded in 1255. Ten years afterwards the choir was completed, but the remainder of the building occupied a full century, for the consecration did not take place till 1379. In 1821 the church suffered severely from a fire, but there was fortunately an enthusiastic society formed for its restoration, and large sums have been raised and expended on the works. It has been proposed to raise additional funds by means of a lottery, and the approval of the Emperor has been obtained for the arrangements, by means of which it is expected a sum of 100,000 marks will next year be at the disposal of the society. That sum will not be sufficient to carry out all that is desired, for the promoters are ambitious to restore the church to a condition which will correspond with that of 1379.

A characteristic difference between German and French competitions for students of painting is that in one case classical subjects are proposed and in the other what may be called commonplace or realistic subjects. The conditions of the competition for 1901 in the Royal Academy of Berlin are a proof. For the principal prize in painting, which amounts to 3,000 marks, the subject given is miners carrying a fellow-workman out of the depths into light. For the sculpture prize the subject selected is a group of men, women and children (harvest labourers or vine-dressers) descending from a mountain to a valley. In both cases the stereotyped instruction is given that as many naked figures as possible are expected to be introduced. The two subjects are excellent tests of ability, but conventional figures are not likely to be successful, and the competitors will have to go to nature for inspiration. No doubt tradition is upheld by the employment of classical subjects, but it might be an advantage if in our Royal Academy the German system was more often imitated.

An Art History Congress has been held in Lübeck, at which information was forthcoming about the preservation of ancient monuments in various parts of Germany. With the exception of Saxony, where there are no definite regulations, and of Hesse, where the arrangements are not complete, the other divisions of the empire have endeavoured to make rules which will be effective for the conservation of ancient remains. Schinkel, the architect, as far back as 1815, formulated regulations on the subject, but the necessity of a strict observance of them was not realised in Prussia until some years afterwards. Lübeck is believed to have been the first city in which men recognised the value of their inheritance, and antiquity became a comprehensive title for works of art of all kinds that were produced in a past age. Many of the works which enrich the city would probably have passed into the possession of strangers if it were not for the operation of the laws which were passed by the Council in 1818. What is now desired is to have unity of action throughout Germany, for apparently professors and other archæologists are advocates of centralisation, and we imagine the imperial authorities will be only too ready to adopt the system.

On Wednesday evening the subject of "Art: its Relation to Religion" was considered at the Church Congress in Newcastle-on-Tyne. Mr. W. Hole, R.S.A., advocated the formation of a guild of church artists, to include architects, painters, sculptors, workers in wood, metal, glass and needlework, who were willing to devote as a free gift a tithe of their time, skill and labour to the service of the Church. Mr. Stirling Lee in his paper maintained that no field could give greater possibilities and opportunities than the Church for doing great work. But what was to be done when application for a faculty to erect a screen with figures of the Crucifixion would be refused as illegal? Papers by Mr. E. S. Prior and Mr. Selwyn Image were also read. A letter was received from Mr. Watts, R.A., in which he expressed his conviction that art is "a divine voice, uttering through all time its message to mankind, the handmaid of religion, lifting the mind into an atmosphere of wonder and worship." No resolutions were adopted.

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: THE LADY CHAPEL.

THE TOWERS, PANGBOURNE, LOOKING NORTH-EAST.

BUSINESS PREMISES, NORTHGATE STREET, CHESTER.

The widening of Northgate Street has necessitated the reconstruction of the buildings on one side, and this has been so carried out as to retain the "Arcade" or "Rows," which are a feature of the city. The three shops which we illustrate have lately been completed. The timber framing is in oak, the builders being Mr. Henry Clegg and Mr. John Mayers, both of Chester.

MOSTYN HALL, FLINTSHIRE, NORTH WALES.—GATES TO FORECOURT.

The illustration shows the new piers, railings and gates recently erected in front of Mostyn Hall for Lord Mostyn. The railings and gates are in wrought iron, and were made by Mr. Swindley, of Handbridge, Chester. The hall itself is an ancient building, and was renovated some years ago under the direction of the late Mr. Ambrose Poynter, father of the present President of the Royal Academy.

CHURCH OF ST. FELIX, FELIXSTOWE.

THE WOODS AND BATH.

A CEREMONY of peculiar interest to the architectural world was performed on the 20th inst. at Bath, when in continuation of the Corporation's scheme for marking the historic houses of the city, Mr. W. Emerson, president of the Royal Institute of British Architects, unveiled upon houses in Gay Street and Queen Square tablets to the two Woods—father and son—whose combined genius did so much in imparting to modern Bath its architectural dignity. Among the buildings with which they enriched the city during the last century may be mentioned the Royal Crescent, immortalised by Dickens in "Pickwick Papers" as the scene of Mr. Winkle's midnight escapade with Mrs. Dowler; Queen Square, Gay Street, the famous Assembly Rooms, and the historic mansion of Prior Park, on the outskirts of the city, which, during the lifetime of Ralph Allen, its founder, was the resort of the most famous men of letters and distinction of the day. The names of Pope, Mason, Hartley, Richardson, the painters Hoare and Gainsborough, Bishops Hurd, Sherlock and Warburton, Lord Chatham and the younger Pitt represent but a few of those who during the latter half of the last century were intimately associated with this classic spot, while Fielding was a regular guest when he lived near, and it is easy to recognise in Ralph Allen, the genial host, the Squire Allworthy in "Tom Jones." The mansion of Prior Park, with its grand Corinthian portico, was built by Ralph Allen in order to demonstrate the qualities of the famous Bath stone, at that time but little worked. Now its reputation is almost world-wide, and the Prior Park mansion affords excellent proof of the adaptability of the stone to all the requirements of modern building. The tablets have been erected upon the houses in which the Woods lived.

Mr. Emerson, at 24 Queen Square, said he had the greatest pleasure and interest in coming down to unveil that tablet in memory of John Wood, senior. Their city of Bath had been intimately connected with the history of that country, both from a religious, political, artistic, literary and scientific point of view in the numbers of distinguished persons who, as visitors or residents, had lived in Bath, but among all those great people who had honoured that city by residence in it, and by the benefits which they had conferred upon it, the city of Bath had more cause to be grateful to the Woods, father and son, than to any other to whom they had erected tablets, and for the reason that John Wood grasped the problem of the laying-out of the city. He had the foresight to see that the lines must be laid down at the very beginning in wide streets, open spaces and good squares like that one. Many of our towns, the Metropolis particularly, had been absolutely spoiled by the want of that foresight. To John Wood, senior, they owed first of all the lines of the city, and then many of the beautiful buildings in it, which in composition and detail were not really inferior to some works of the more celebrated architects of the period. The citizens were also to be congratulated very much on the way in which they were endeavouring to carry out the idea started by the Woods in making Bath an architecturally beautiful city by the additions they had carried out to the public buildings they had amidst them. The President then, amid applause, pulled aside the curtain, disclosing the tablet with the inscription, "Here lived John Wood, B. 1704, D. 1754."

An adjournment was then made to 41 Gay Street, where the tablet to John Wood, jun , was set up.

Mr. Emerson remarked that in unveiling that tablet to the memory of John Wood, jun , he should like to say that he was the worthy son of a worthy father. He worked for a number of years in conjunction with his father, and was responsible for that very street of which they were at the corner (Gay Street) and the Circus. He also built the Assembly Rooms and the York House hotel, and a number of other buildings. Whether he was equal in greatness to his father was, he thought, a question that he need not go into, but any rate both he and his father did some very beautiful work for their city of Bath. One thing which the Woods did in conjunction with Ralph Allen was of extreme utility, and that was the reopening of the Bath stone quarries and the building first of all of Prior Park. The reopening of those quarries gave facilities to carry out all their works in the city by both the Woods, and from a commercial point of view the city should be thankful to the Woods and to Ralph Allen for that. He thought it was rather wonderful when they considered that those architects of 200 years ago, without the advantages of research and travel and without the books on architecture which were available to-day, were able to build and conceive such a scheme as the laying out of the city of Bath, and to build such beautiful buildings as there were in the city, doing work which was certainly not inferior to that of the eminent architects of that day. It was a lesson to architects of the present day, who had the advantages of research and travel, to find that they did not always come up to the beautiful buildings which they saw in that very square. He then unveiled the tablet which bore the inscription, "Here lived John Wood, jun., B. 1727, D. 1781."

At a luncheon given in the Guildhall by Mr. Oliver, the health and prosperity of the President of the Royal Institute of British Architects having been proposed, Mr. Emerson acknowledged the eulogy passed upon him by Mr. Oliver, and said that the object for which they had invited him to Bath that day had been of the very deepest interest to him, and for many reasons. In the first place, he thought it was a very good thing that the city of Bath should so honour the memory of two distinguished architects, because Bath had been intimately connected with the history of the British empire—for the last 2,000 years, he had been going to say—certainly for the last 1,000 years. Two thousand years ago it was occupied by the Romans. One thousand years back their abbey, in its original Saxon form, witnessed the crowning of King Edgar, and about 300 years ago they had Queen Elizabeth in Bath, whilst Her Most Gracious Majesty the Queen, who had occupied the throne for so long a period, came to the city and opened the Victoria Park a year or two, he believed, before her accession. They had had in Bath as residents and visitors kings, queens, politicians and all sorts of eminent people—artists, literary men and eminent churchmen. Eminent men of that distinction were not easily forgotten, but constantly the architect was forgotten. It seemed curious that it should be so, because he supposed the greatest interest in the world attached to the buildings which they saw in the different countries which they traversed. They taught the history of the public and of the social life, the intellectual attainments and the state of civilisation of the nations erecting the buildings, but notwithstanding, the name of the architect was forgotten. To the man who won a great battle they built a monument, and the man who carried through a great Act of Parliament was remembered, but the architect was very frequently forgotten. They had a very notable instance of it in their own city. Their abbey, with its unique west front, which had interested him ever since he saw it as a boy, had a design in it which he remembered very well. The beautiful lesson it taught—that for suffering humanity there were steps up to heaven—must have been thought out by an architect, but he did not think there was anyone who could tell his name. He was therefore greatly pleased that they had not forgotten the Woods, to whom the city owed so much. John Wood was one of the first who conceived the idea of laying out a town by a number of distinct buildings in blocks, and all arranged so that the buildings should show up in relation to each other. He supposed that Wood was practically the first architect to carry out such a conception. He believed Inigo Jones did something of the kind in Covent Garden, but Wood was the first to unite buildings in great blocks. In looking round his splendid works, such as the Circus and the north side of Queen Square, it struck one as rather a pity he did not have the opportunity of building some more important and larger buildings. That he would have done them well was shown by his designs in Bath, and by what he built for Ralph Allen at Prior Park. There was a quiet grandeur and a strength about his work that was a lesson to them. At the present time there was a rabid striving after originality at no matter what cost of beauty or repose so long as a thing, he was going to say, "hit you in the face," for that seemed to be the idea of architecture in many of the towns to-day. In all the works of Wood there was charming detail and a quiet reposeful design, and it was only because he lacked the opportunity of doing larger work that there was a lack of magnificence to which he might have attained had he had the opportunity. The city of Bath was to be congratulated on having erected such tablets to the memory of great men, and more than all upon erecting them to the Woods, because their work was a lasting one. They were reaping a solid advantage, even at the present day, from the work the Woods did 200 years ago, and the lines which they laid down had no doubt guided the authorities in later years in making their more modern streets. He also thought the city was to be highly congratulated on the new buildings which had been recently erected. He only trusted that as time went on they would exercise that control which they had apparently been exercising in later years to prevent that excessive striving after originality, and try to produce in the architecture of the town the same quiet, beautiful, dignified, reposeful work which the Woods, father and son, did. He was very much obliged to them for the kind way in which they had received the toast. Mr. Emerson, subsequently rising, added that that morning he had been to Prior Park, and the view from there was the most beautiful he knew anywhere, with that little bridge at the bottom of the hill, making a most charming foreground in the middle distance. He was sorry to see the neglected condition of that little bridge; the balusters were all broken, and parts were entirely missing. It appeared a great pity that such attention as was required to keep them in a proper state of repair should not be given by a city which apparently felt a deep interest in architecture.

The Mayor said he saw on the very beautiful menu which Mr. Oliver had given them that day a portrait of one of the

Woods, and he saw several interesting things besides, such as "Gelantine of pigeon" and "Foie gras truffled in aspic," but he did not see the name of Mr. Oliver. It only showed how diffident he was in bringing his hospitality before the citizens who were there that day, and in asking them to drink his health he would emphasise very briefly and very humbly a remark which Mr. Emerson had made, and that was that it might possibly be better for this city, which was famous for the architecture of the Woods, if there was some conclusion arrived at among the architects so that the buildings erected here might be in consonance with the beautiful examples they had of old architecture in the city. In law there was a certain body sometimes constituted called a jury of matrons. He did not know whether they would welcome from the chief magistrate of the city a suggestion that there should be a jury of architects. He was sure that, like matrons, they would be highly respectable, very reticent and very careful in their judgments, and he thought it might possibly conduce to the well-being of the future architecture of the city. He concluded by asking them to drink very cordially to the health of their host, Mr. Oliver.

Mr. Oliver in reply said if he had been the means of doing anything to entertain the company he had been amply repaid by the fact that he had had the extreme pleasure of the opportunity of cultivating Mr. Emerson's friendship. That would always be a source of gratification to him, and he should always look back to that as a red-letter day. He thanked them for the way in which they had received his name.

The company shortly afterwards separated.

ENGLISH AND SCOTTISH MEDIÆVAL CHURCHES.

AMONG the most remarkable peculiarities which distinguish the churches of Scotland from those of England are the following:—First, the prevalence of round arches, especially in doors, when the mouldings and other accompanying features mark a more advanced period; second, the frequency of circular windows, though sometimes of small size; third, the occasional occurrence of saddleback towers, as at Dundee and the abbeys of Pluscardine and Sweetheart; fourth, the double doors set within a Pointed arch, each division having usually a flat head; fifth, the rare occurrence of battlements; sixth, the frequency of semi-hexagonal apses; and seventh, of graduated gables, which also are often seen in domestic examples; eighth, the infrequency of tracery which can exactly correspond with the best English specimens of Middle-Pointed, or with those of Third-Pointed character; in Scotland the lines of tracery being almost invariably curved, and therefore more or less resembling the French Flamboyant style.

All these peculiarities will be recognised as in some degree approximating to a foreign and particularly a French character, and this may be accounted for by the intimate connection that long existed between Scotland and France, while she was almost always at enmity with England. It would therefore be highly probable that a knowledge of architecture would be derived from France, and that architects from that country would be generally employed; though in the instance of Roslin Chapel (built 1446), it is recorded that an architect was introduced from Italy—a statement which is fully borne out by the strange style of that singular edifice. If the two earlier architectural styles in Scotland so nearly resemble those of England, it will be recollected that this is also the case in Normandy, though perhaps in other parts of France the coincidence is almost confined to the Romanesque.

In one respect the Scottish churches differ from the French, namely, in the plain and unornamented character of their steeples; yet that of Dundee has a very foreign character and is of imposing appearance, though perhaps more like the tower of a hôtel de ville than of a church. It appears probable that the Scottish steeples were in general not very lofty or distinguished, and of those that remain none are remarkable or elegant, except the tower of Dundee and the spire of Glasgow, which last has nothing very decidedly French in its character. In the cathedrals of Aberdeen and Elgin and the abbey church of Arbroath the west front has two towers, an arrangement common in France. Glasgow has, besides its central steeple, one rather poor tower at the west end. At Dunkeld a plain late tower occupies the west end of the north aisle. At Dunblane a plain steeple is on the south side. At Dundee the tower is at the west end. In some other large churches the ruin has been so complete that little or no idea can be formed of the character or proportions of the central tower.

The cathedrals were generally of less ample dimensions than those of England, though those of St. Andrews and Elgin must have been noble edifices, as Glasgow is still, having happily been preserved entire; but the churches of the monastic establishments, which were mostly wealthy, were often on a grand scale, as will be seen from the remains of Arbroath, Jedburgh, Kelso, Melrose, Paisley, Dumfermline, Dundrennan and Sweetheart. The cruciform plan is generally maintained in the larger churches, but the cathedrals of Brechin, Dunblane and Dunkeld are without transepts.

The Romanesque specimens are chiefly found in the southern part of Scotland. The finest work is in the abbeys of Jedburgh, Kelso and Dunfermline, and there are very fair examples in the nave of Dunkeld Cathedral, and in the small churches of Dalmeny and Leuchars, which last has a semicircular apse. A very curious early Romanesque specimen is the chapel of St. Regulus, adjacent to the cathedral of St. Andrews, and supposed to have been the original cathedral. Some portions of the cathedral itself are late in the style, verging to First-Pointed, and there are intersecting arches in Holyrood Chapel.

The First-Pointed specimens are pretty numerous. Among the finest are the abbey church of Arbroath, the principal portions of the cathedrals of Glasgow and Elgin, and several parts of those of St. Andrews, Dunblane, Dunkeld, of the abbeys of Pluscardine, Jedburgh, Dryburgh and Paisley, and Holyrood Chapel. Some of these, however, are not unmixed with singularities, especially the round arch, which occurs with First-Pointed mouldings. Some parts of Glasgow Cathedral have an early Middle-Pointed character and more English than usual in Scotland. There are also features in St. Giles's, Edinburgh, St. John, Perth, and the abbeys of Melrose, Pluscardine and Sweetheart which bear resemblance to English Middle-Pointed work. To the age distinguished in England by that style of architecture may probably be referred St. Giles's, Edinburgh, St. John, Perth, and several portions of the cathedrals of Aberdeen, Elgin and the abbeys of Melrose, Paisley and Sweetheart and the choir of Dunkeld. In these occur many anomalies, especially at Aberdeen, where the arcade has a First-Pointed appearance, with circular columns, but the west front is of a different character, having two machicolated towers with short spires, and seven long single-light windows with round heads trefoiled, beneath which is a double door within a round arch.

At Melrose several early forms are found with late details, one curious mixture being the nail-head and toothed ornaments with features of a very advanced style. At Paisley the west front is very lofty and has a rich and peculiar arrangement with two heights of windows—in the upper a decidedly Flamboyant one of five lights, in the lower two windows (which is very unusual), each of three lights, with tracery of the Geometrical kind. Below is a very richly moulded doorway, flanked by narrow arches. In the same church the nave has an uncommon arrangement of triforium, and some very singular large projecting corbels or brackets, which are probably unique.

Of other churches more advanced in the Pointed style, St. Michael, Linlithgow, and the church of Stirling are large and complete specimens, both exhibiting much of French character, and having semi-hexagonal apses. At Linlithgow is a fine double door in the tower, and several varied Flamboyant windows. At Stirling the columns are circular; the clerestory has round-headed windows; and the east end has very fine but curious groining of late date.

Trinity College Church, Edinburgh, said to have been erected in 1462, by Mary of Guildres, queen of James II., is quite unlike any English church built at the same time, but has the three-sided apse and much of Flamboyant character, though the foliated capitals of the clustered columns are unusually delicate. The chapels of the Black Friars and St. Salvador's College, St. Andrews, and of King's College, Aberdeen, are smaller buildings of a still later character, much mutilated, but all having the three-sided apse, and decidedly foreign in their general appearance. And Roslin Chapel, which we have already noticed, is a complete anomaly as to architecture. The towers of St. Giles's, Edinburgh, and of King's College, Aberdeen, are surmounted by a singular ornament resembling an imperial crown, certainly very un-English; at Linlithgow was another, now removed; the resemblance between these and the beautiful lanthorn of St. Nicholas, Newcastle-on-Tyne, is but slight.

The nearest approach to English Third-Pointed tracery appears in the eastern windows of Melrose Abbey, and perhaps in some rather debased ones in the choirs of Dunblane and Linlithgow.

On the south side of Brechin Cathedral is a round tower, less rude than most of those in Ireland, and said to have been built in 1020 by Irish architects. Some work of a very anomalous kind occurs in the sacristy on the south side of the choir of Arbroath abbey church, which it is not easy to describe. The shafts which support the ribs of the vaulted roof have shields on their capitals, and along the lower part runs an arcade of trefoil arches with singular fluted columns, the capitals of which are strangely varied. In the walls are several curious aumbryes, and the door leading from the choir is a very odd one, having a kind of raguly hood, and both the imposts and jambs worked in a remarkable fashion. The east window of this sacristy is a double lancet, decidedly First-

Pointed, of which style is all the rest of the church; but whether the other features just mentioned are coeval or not they are certainly very singular and anomalous.

It should be observed that the existing remains in Scotland are chiefly those of large churches or monastic establishments. Of ordinary parochial churches, few, if any ancient examples are to be found, except perhaps the Romanesque churches of Dalmeny and Leuchars; yet it is possible that more may exist than are generally known. The following conclusions may therefore be drawn:—I. That the Romanesque and First-Pointed styles did not assume a character essentially different from that of England, though in the latter some variations may appear. II. That the later periods of Pointed architecture in Scotland do not correspond with those known as Middle and Third-Pointed in England, assuming generally a character allied to the Flamboyant style of France, though often retaining some early forms which in England do not seem to have been continued so long.

THE POSITION OF ARCHITECTURE.

ARCHITECTURE, and especially Christian architecture, is superior to painting or sculpture. As one of the fine arts, it is indisputably more original than either. The architect is like the man who, after storing his mind with knowledge derived from an extensive course of reading, writes a book which aspires to be original—a book in which no direct plagiarism from the authors whose works he has studied can be detected, but which he could not have written were it not for his study of those authors. The painter or sculptor, on the other hand, is the translator who reproduces in his own language the thoughts of another writer. Painting and sculpture are simply imitation. The more perfect the imitation the more perfect the picture and statue. And as no translator ever equalled the elegance or force of the original, so there is no picture or statue which has not fallen short of nature. The Homer of Pope, splendid though it be, is inferior to the Homer of Homer. "The statue which enchants the world" is, after all, less enchanting than the "human form divine" of a beautiful woman.

That architecture is more practical and useful than painting and sculpture is a proposition which requires little argument. Indeed, to be a perfect architect requires a combination of practical and useful accomplishments rarely united in one individual. And though we cannot altogether subscribe to the dogma of Vitruvius, that a perfect architect must of necessity be intimately acquainted with literature, design, geometry, optics, philosophy, music, medicine, jurisprudence and astronomy, still some of them are indispensable, and most of them desirable for an architect. There is not such an evident connection between astronomy and architecture as Vitruvius would seem to suppose, except the undeniable fact that astronomy and architecture commence with the same letter of the alphabet. But to say nothing of design, geometry, optics and arithmetic, it is plain that the man who understands the principles of music is better qualified to build a church, a concert-hall, or an opera-house, than the man who knows nothing of music; and that the more he excels in philosophy, poetry and acquaintance with history—in short, the more extensive his information and the more enlarged his understanding—the greater will be the probability of his achieving success in his profession. Would Michel Angelo have been such an architect had he not also been a sculptor, a painter, a poet and an—anatomist?

An anatomist! What possible connection, it may be asked, can subsist between architecture and anatomy, except that, as in the case of astronomy, they both begin with the same letter. Will a knowledge of the articulations of the vertebral column assist us in building the column of a portico?

Two instances mentioned by the late Professor Cockerell will answer the question. It was a knowledge of anatomy which suggested to Brunelleschi the idea of the dome of Sta Maria—an idea which Buonarotti followed in constructing the dome of St. Peter's—an idea on which almost every subsequent dome has been built. Brunelleschi wished to combine strength with lightness in the dome of his cathedral, and he attained his object through his knowledge of anatomy. He reflected that the bones of animals, especially of birds, possessed solidity without weight, by the double crust and hollow within; and he remarked that the human skull is constructed with a double plate connected by the walls of the hollow cancelli. This idea he adopted in the two plates which form the inner and outer domes of the cathedral at Florence.

It was a knowledge of anatomy which suggested to Sir Christopher Wren the idea of the spire of St. Bride's. He wished to impart to that spire the utmost solidity and duration, and he adopted his idea from no more dignified original than a shell. He found that the long, thin shell, called turretella, though otherwise extremely liable to fracture, was yet rendered impregnable by the central column round which the spiral turned; and accordingly, when building the spire of St. Bride's, by forming a spiral staircase to the top he left us the most remarkable and enduring spire hitherto erected. Wren thus proved the utility to an architect of a knowledge of anatomy, if we may speak of the anatomy of a shell; if, however, we prefer to call it conchology, it only shows that Vitruvius did not exaggerate so much after all, and that there is no branch of human knowledge, however at first sight inappropriate, which may not be useful to the architect.

The study of history is, no doubt, useful to the architect. But the study of architecture is, perhaps, even more so to the historian, producing an effect on the imagination which the study of nature alone cannot excite. Rivers and mountains and valleys belong to ourselves as much as they did to our ancestors. They are the same now as then. They have seen great deeds done of old, but they do not bring those deeds before our eyes. The Nile is the same mighty river which it was three thousand years ago when Moses turned its waters into blood, but it cannot place the ancient glory of Egypt before us like the Pyramid of Chëops or the ruined temples of Thebes. Had we nothing but the seven hills to remind us of heathen Rome, we should not be so impressed with the reality of her former existence as we are by the Coliseum, the Pantheon and the Palace of the Cæsars. The edifices which nations raise are historical illustrations of the countries to which they belong. Architecture has been well called the historical costume of different nations in different ages.

But the historical value of architecture is not confined to producing an effect on the imagination. New facts, sometimes of the gravest importance, are revealed through the agency of old ruins. The knowledge of the existence of races of which we had never before dreamed, we sometimes owe to architectural remains. We should never have known that a people, all other traces of whom had perished, once flourished in Central America, had it not been for the ruins explored several years since by Mr. Stephens. We should never have known of the discovery of America by ancient sea-kings, probably centuries before the time of Columbus, were it not for the remains of an old Scandinavian church in Rhode Island. And more important still, we see how the truth of sacred history is confirmed by Layard's discoveries among the sandy mounds of Nimroud. Indeed, there is no art to which history, both sacred and profane, is more indebted than the art of architecture.

THE HOSPITIUM OF READING ABBEY.

IT has become customary, says the Hon. Secretary of the Berks, South Oxon and North Hants Footpaths and Open Spaces Society, amongst antiquaries and historical writers to regard Reading Abbey as an unreformed Benedictine foundation, and on this assumption some general conclusions have been arrived at in regard to English monastic history not warranted by the facts, because the evidence, both direct and indirect, is conclusive that on its foundation Reading was a Cluniac and not a Benedictine abbey. All writers on English monasticism agree that there was no such house in the country, all English Cluniac houses being simply priories directly or indirectly subordinate to the mother abbey at Clugny. This is the more curious, as the earlier writers on Reading Abbey—Coates, Man, Doran—were well aware that Reading was settled with Cluniac monks, and no discredit is attached to them for not having recognised the significance of the fact, having regard to the deep obscurity in which until recently the history of the Cluniac Order in England was wrapped. The significance I have in some measure pointed out in the introduction to the reprint of Charles MacFarlane's "Legend of Reading Abbey," and hope some day to do so more at length. Suffice it here to say that it gives to Reading a distinctive and unique position amongst the monastic houses of England, and as such makes of especial value the existing remains of the buildings. This is rendered the more so when it is recalled that the abbey church and main buildings were under construction, at the cost of King Henry I., at the very time that he was carrying to completion the magnificent basilica church at Clugny, which, until the building of St. Peter's at Rome, had no rival in Christendom.

The value, from a historic point of view, of the remains of the fabric of Reading Abbey is also rendered the greater because, from the positions they occupy, the material remains of the English Cluniac houses are of the scantiest, having for the most part entirely disappeared. In the Cluniacs the principles of feudalism were more exemplified than even in the Benedictines. The Cluniac abbot or prior was a powerful feudal lord, as is amply demonstrated by the charter of Reading Abbey and the scanty knowledge we have of its history. The larger number and more extensive remains of our monastic houses are Cistercian, the beauty of whose surroundings was in no small part of their creation, while the remains of the Cluniac houses are of the scantiest and most insignificant character. Hence the added reason for preserving in their entirety with jealous care those we still have at Reading.

But it may be said that the existing remains of the Hospitium buildings at Reading were not an integral part of the abbey. In a sense this may be true, but essentially it is not so, and it will not be difficult, I think, to demonstrate that they were in reality auxiliary buildings found necessary to carry out one of the purposes for which the abbey was erected. No greater mistake can be made than to regard monastic houses, especially in the earlier part of the Middle Ages, as simply and exclusively religious institutions. They were much more than that, and to estimate their influence upon the life of the community aright, they must be regarded in many other aspects. One duty of the monastery, laid upon it by the rule of St. Benedict, which applied no less to the reformed orders than to the original Benedictine, was to provide hospitality for strangers and travellers of all grades of society. "Let all guests who come to the monastery be entertained like Christ Himself, because He will say, 'I was a stranger and ye took Me in.' Let due honour be paid to all, especially to those who are of the household of faith, and to travellers. . . . But let the poor and strangers especially be diligently entertained with all care." It was in accord with this ruling principle that the duty was laid upon the abbot by the foundation charter of Henry I. not to "bestow the alms of the monastery upon his lay kindred or any others, but for the entertainment of the poor and strangers." The "domus hospitium" or guest-house was as necessary a feature of a monastery as its church or chapter-house. Clugny itself would seem to have set a notable example to its subordinate houses in this respect, for it is said to have fed and assisted 17,000 poor every year, and many instances are given of its prodigality in dispensing hospitality. And if we may judge from the account given by William of Malmesbury four years after the date of its foundation charter, and many years before its church was completed and dedicated—in 1125—Reading closely imitated the mother abbey in this respect. "He [*i.e.* King Henry] built a monastery between the rivers Kennet and Thames," it runs, "in a place calculated for the reception of almost all who might have occasion to travel to the more populous cities of England, where he placed monks of the Cluniac Order, who are at this day a noble pattern of holiness and an example of unwearied and delightful hospitality. Here may be seen what is peculiar to the place, for guests arriving every hour consume more than the inmates themselves." As the abbey was constructed to accommodate 200 monks, and would probably have not less than half that number in residence, besides a considerable addition of other inhabitants, some idea of the numbers thus entertained can be gathered. It was owing to the large number thus claiming the convent's hospitality, which could doubtless say of itself as was said of the famous abbey of Bec, "the door of the abbey is always open to all and its bread is free to the whole world," that the erection of an auxiliary or relief guest-house, to lessen the pressure in the existing one, was decided upon.

The story of the initiation of the Hospitium at Reading is thus told in one of the volumes of the Berkshire Ashmolean Society's publications:—"It had come under the observation of Abbot Hugh (1180-99), eighth abbot of Reading, that whilst the rich traveller never failed of a splendid reception at the abbey gate, the poor wayfarer—the solitary pilgrim—if not actually repelled, too often met with treatment which was equally repugnant to charity and the pious wishes of the royal founder. As a remedy for such unseemly conduct, the abbot determined to build a place of reception which should be set apart for the poor and needy. Hence the erection of St. John's House, which they placed just outside the abbey gate, so that those who did not apply or did not find entrance there might be received into the humbler dwelling with all courtesy. Twenty-six poor persons, viz. thirteen men and thirteen women, were to be constant residents in the new hospital, and to assist the monks in the oversight of the guests. The church of St. Lawrence was annexed to the hospital with the consent of Hubert Walters, bishop of the diocese. The brethren and sisters were to be supplied with all things necessary out of the alms daily distributed by the abbey. The needy travellers, for whom the hospital was primarily designed, were to be maintained out of the profits of a mill at Leominster, relegated by the abbey to the hospital, and by other endowments." For a guest-house there were three essentials—a refectory, for entertainment; a dormitory, for rest; an oratory, for prayer. The principal guest-house, there is no doubt, although its location is not for a certainty known, stood close to St. Lawrence's Church and the main gate, and would contain a refectory and dormitory, of noble proportions, in character with the rest of the abbey buildings. The parish church of St. Lawrence, which was built by the monks, probably in lieu of an earlier one destroyed when clearing a space for the abbey buildings, would not improbably serve as the oratory, the whole of the buildings being in the rounded Norman style which, as far as our knowledge goes, characterised the whole of the abbey buildings, and of which there are remaining examples in the south side of the church. The new guest-house also had a refectory of considerable dimensions standing on the site of the Old Town Hall, a dormitory or dormitories, of which the existing building was part, and in addition, at its east end, the houses for the twenty-six men and women who were to aid the abbot's appointed controller in entertaining the guests. The chapel of St. John's, as well as the north aisle, were both added to the church at this date to meet the need for increased accommodation.

Mr Guilding speaks of the original hospital as being an Anglo-Norman building, but I imagine it was more likely, from its date, to be of the earliest Lancet or Pointed style, in accord with the east end of St. Lawrence's, which would doubtless be part of the alterations made at this period. This early building would seem to have continued its useful purpose for some three centuries, until, in the middle of the fifteenth century—in 1438—the hospital and the north aisle of the church and St. John's Chapel were completely overhauled in accord with the then prevailing style of Gothic architecture. It has been thought that little save the foundations of that portion of the buildings now remaining are left of the original structure, but it is quite possible that the walls of the earlier buildings may have been more extensively utilised. The hospital was shut off from the abbey by a wall, and it had its own separate entrance, but that it was an essential part of the abbey buildings may be safely concluded from the fact that it was erected upon a portion of the outer court of the monastery; that the endowment for entertaining strangers appears to have come entirely from monastic sources, and especially from the profits of the mill of the subordinate priory at Leominster, while the permanent residents were supplied from the abbey's alms; that the official controlling the hospital was of the abbot's appointment; that the abbot exercised the right of suppressing the institution and of diverting the funds to other purposes; and, finally, that at the abbey's suppression the Crown took possession of this as a portion of its possessions, finally dissolving the hospital and utilising the dormitories as stables for the king's horses, the refectory continuing as the Grammar School, and subsequently also as the Town Hall. For some forty years after the reconstruction of the buildings—in 1480—the hospital appears to have been entirely suppressed, and five years later the Grammar School was founded, though the dormitories continued to be used for mendicants until the final suppression of the abbey in 1539.

In a paper read before the Literary and Scientific Society at the time of the restoration of the building, the manuscript of which (now in the Free Library) I have used as a ready storehouse of facts relating to the hospital, the late Rev. J. M. Guilding, F.S.A., thus discussed the probable reasons of its discontinuance:—"Many causes contributed doubtless to the extinction of the hospital. Possibly the unsettled state of the kingdom during the civil strife in the War of the Roses, possibly the increasing wealth and growing trade of the country affording better roads and convenient hostelries in all the large towns, possibly the jealousy of the Merchant Guild towards itinerant strangers—all or some of these may have prevented the passing traveller from seeking gratuitous board and lodging from the monks of Reading. But, in my opinion, it was a plain indication that the monastic life had done its work. Many of the large houses had become indolent and corrupt. It was no longer in touch with the wants, the sympathy or the aspirations of the country, and the abbot of Reading had wisely read the signs of the times when he saw in the keen spirit of inquiry and the revival of learning and the invention of printing that education and grammar schools would take the place of the monastery." The monastery and the hospital for wayfarers were to give place to the modern Poor Law system. But it may well be doubted whether, if they had the opportunity, the inmates of our vagrant wards and common lodging houses would not, if it were possible, be glad to become the guests of the monks of old.

It will be said, Why trouble so about a remnant of a building which has long since served its purpose, and may now well give way to the necessities of our modern life? And some perhaps, may be inclined even to join in Carlyle's characteristic outburst against what he is pleased to call dilletanteism. But, as Carlyle himself was fain to admit of the ruins of St. Edmundsbury, "Yet these grim old walls are not a dilletanteism and dubiety; they are an earnest fact. It was a most real and serious purpose they were built for. Yes, another world it was, when these black ruins, white in their new mortar and fresh chiselling, first saw the sun as walls long ago." And therein lies their value, as in some way testifying to times far different from our own, and provoking intelligent inquiry regarding them, and an intelligent appreciation of their purpose. In a word, they are historic memorials.

Perhaps no more striking testimony was ever given to their utility as such than that of the Bishop of Oxford, in the adjoining town hall, shortly after his translation to his present diocese, in telling how it was that he became interested in the study of history. As a lad his curiosity was aroused by the existence of some old buildings in his neighbourhood. He rnt all he could about them, and, as he grew, extended investigations to others at a greater distance. Gradu- y his horizon widened till it included the whole land, d he became known as one of the most erudite of country's historians. The educational value of such ildings in arousing and stimulating interest among the young, pecially in the history of their own country and in fostering triotism, has been more fully recognised in Germany than in y other country. There it is the custom to take the elder hool lads on a march of several days' duration, knapsack on ck, to historic buildings and scenes, where speeches are ven, poems recited, and songs sung that may serve to impress on the youthful minds the events in the nation's history with hich the buildings and scenes are associated. Similar ethods have been in some measure adopted in some of the merican States, where German educational customs have ore influence than with ourselves. And even in our own ountry visits to such places have in the new Code been ecognised as a permissible part of the curriculum of our lementary schools. That being so, the time has surely come hen we may expect our local authorities to exercise a jealous are for the preservation of such as may be in their charge.

In concluding the paper before quoted, Mr. Guilding thus poke of the existing buildings :—"The remainder of the building still stands, with the exception of the eastern end, now St. Lawrence's Vicarage. Its condition until now was lamentable. The old Tudor windows had been removed, and it had been cruelly disfigured in many ways by the bad taste of the last century. A few years ago this portion of the building was also doomed to destruction, and might have fallen into the ruthless hands of the modern builder to be converted into a factory or workshops. It was rescued by the public spirit of our then mayor, Mr. Arthur Hill, who purchased it with a view to its preservation. It has now become the property of the Corporation of Reading, and will, I doubt not, be carefully preserved by them as one of the few relics of domestic Mediæval architecture which the town possesses." Referring to his survey of the history of the old dormitory, Mr. Guilding said :—"It will be turning over the pages of an old book entitled 'English History.' It may help to give some insight into the religious, social and political life of our forefathers. It will, I think, justify the conduct of the Corporation in the careful preservation of this building, even if somewhat costly, as an act of intelligent public spirit. . . . I cannot conceive an object more in harmony with the character of Abbot Hugh than to transform this old foundation into an institution of higher education for the benefit of another generation of his countrymen." It is not difficult to imagine the feelings, and the expression he would have given to them, of the good antiquary had he lived to see the day when the body in whose guardianship he had such implicit trust seriously entertained the proposal to demolish the remaining portion of these interesting historic buildings, with the intention, moreover, of replacing them by a continuation of what he in his paper describes as "the hideous structure which forms the back of the new town hall."

It were possible to write much more on the subject, but I think I shall have said sufficient to show that it is not without good reason that my Society has made representations in favour of the retention of this ancient building, and to secure that what was the principal front should not be shut out from public view more than the exigencies of the new building absolutely require.

May I be permitted a personal allusion in conclusion? Only a few years before the building was restored for the purposes of the Science Schools the Corporation in its wisdom had practically decided upon the erection of a police-station upon the site of the new college buildings. The matter had been duly considered in committee, and was apparently to be carried unanimously by the Council, when a solitary member pleaded, without reason being assigned, for a month's delay before the final decision was taken. Still no voice was heard in opposition, and the proposal appeared to be acquiesced in by the community. At the last moment I ventured in the press to enter a protest against the proposal on the ground that the provision for popular education was at that time much more deficient than it had been for a long period, and that probably ere long the need would have to be met by an extension of the Science and Art Schools. The late Dr. Stevens took up the matter, obtained an extensively-signed memorial against the proposal, and the Corporation at its next meeting rejected its committee's recommendation with an as complete unanimity as at its previous meeting it was apparently prepared to adopt it. Had the Corporation persisted in its scheme it is scarcely necessary to say that the proposed college buildings would have been an impossibility. Instead of, as then, making the appeal a personal one veiled by the semi-anonymity of initials, I am now able to speak in the name of a Society whose interests I have the honour to serve, and which is assured of the support of kindred societies in the protest it has made. But, as in the former instance, so now, I would prefer basing that appeal on persuasive reasoning rather than on organised opposition, and I cannot but hope that now, as then, the Corporation may deem second thoughts the best, and may as unanimously decide against its committee's proposal in this matter.

THE UNIVERSITY OF LONDON AND ARCHITECTURE.

In a letter to the *Times* Mr. T. Bailey Saunders writes :—

The President of the Royal Institute of British Architects appears to think that the interests of the profession of which he is the official head have been in some way sacrificed during the reconstitution of the University of London. In his letter in your issue of yesterday he complains that the representation which Lord Cowper's Commission proposed to assign to the Institute on the Senate was afterwards taken away; that the recognition which it desired to give to architecture as a branch of a faculty of applied science has not, in fact, been given; that the work done by the Institute and the examinations which it holds have been ignored; that the statutes framed by Lord Davey's Commission contain no mention of architecture; that that Commission was unwilling to receive a deputation anxious to urge the claims of the subject; and, finally, that the lack in the University of any systematic course of study in architecture, equally with law, medicine and engineering, is much to be deplored.

I feel sure that the President, together with all who desire to promote architectural education in London, will not be displeased if his letter can be shown to take a too desperate view of the facts. Will you permit me, sir, as having held the office of secretary to Lord Davey's Commission, to suggest a different way of interpreting them?

The University of London Act of 1898, in fixing the constitution of the Senate, did not, it is true, provide for any representation to be given to the Institute. But neither did it mention the Royal Society and some other distinguished bodies on which Lord Cowper's Commission desired to see representation conferred. These bodies were excluded in accordance with the terms of a certain compromise to which the Act gave effect, and which enabled the Act to pass. If, in so far, therefore, the President's complaint is well founded; if the Institute was excluded from direct representation on the Senate, it was excluded in good company. But in no other respect is there, I think, much cause for dissatisfaction in regard to the position which architecture holds, and may hold, in the University. The President is technically right in saying that the statutes do not mention the subject, but if he will turn to those dealing with boards of studies he will find that certain boards enumerated in the annexed regulations are to be appointed, and amongst them "A Board of Fine Art including Architecture." This provision embodies the recommendation of Lord Cowper's Commission. There is nothing whatever in the statutes to prevent the future Senate, if it so see fit, from recognising architecture as a branch of the faculty of science or of engineering. Nay more, there is a particular statute enabling the Senate, if it so see fit, to conduct examinations of a professional character, jointly with institutions holding such examinations. Although academic interests require that power of this kind should be exercised with extreme caution, and only in cases where efficiency will be thereby promoted, it offers an opportunity of association with the University of which the Institute may do well, perhaps, not to lose sight. Lord Davey's Commission was fully occupied, and considered a deputation in support of the claims of architecture to be unnecessary, because it was well aware of those claims, and did everything in its power to meet them, not only by taking the steps which I have indicated, but also by including among the recognised teachers of the University such qualified persons—unfortunately they were very few—as applied to be recognised for architectural subjects. As to a systematic course of study, it was no part of the Commission's business to lay down a curriculum in architecture or in any other branch of knowledge. That is entirely a matter for the future Senate. But the Senate cannot encourage systematic courses where none exist, or provide them itself without funds.

So far as I am aware, there is no school of architecture in London at the present moment which has reached the level of efficiency displayed in the schools of medicine and engineering, or at all comparable with any of the more advanced schools of architecture abroad, of the standing, for example, of the department devoted to that subject in the great technical University at Charlottenburg, Berlin. With the amount of rebuilding that is in progress and in prospect in the Metropolis, such a school might accomplish a great work. I am not unmindful of an Association, protected to some extent by the Institute, which, without the command of any large resources, is yet doing useful service in the way of instruction. But its best friends can scarcely claim that it has now attained to University rank. When it develops, or when an efficient school for the study of architecture arises in London, it is hardly likely to be ignored by a University anxious to promote the interests of all branches of science and learning. But the promotion of those interests depends upon proper endowment, and there is no place of education in the Empire which is just now worthier of attention at the hands of generous donors than the University of London.

THE RESTORATION OF BRECHIN CATHEDRAL.

THE jealous care and veneration for edifices of ancient historical interest and architectural beauty, which are characteristics of the present age, are receiving, says the *Scotsman*, a notable exemplification in the case of Brechin Cathedral. A large sum of money, subscribed chiefly by persons in the locality, is being expended on the building, almost solely for the purpose of restoring it to its original condition, which had suffered more from injudicious alteration than the ravages of time. The history of this old building goes back to the reign of David I. It was a worthy example, in design and workmanship, of the handsome ecclesiastical edifices of the period. Since, then, however, it has at various periods undergone alteration, and almost in every instance the structure has more or less suffered. In the last extensive alteration to which it was subjected, the hand of the Philistine was signally in evidence, with the result that its former beauty was to a large extent lost. This was in the period between 1805 and 1807. Drastic measures were then adopted with a view to increasing the accommodation. Single-minded in this object, those who carried out the reconstruction scheme at the beginning of the present century seem to have allowed neither reverence for a monument of the past, nor any regard for beauty of design and proportion, to stand in the way of mere utility. Their operations, indeed, were such as might almost point to the assumption that they had conscientious objections to anything that might please the artistic eye in their ecclesiastical structures. With a view to securing the largest possible amount of sitting accommodation, and making the cathedral suitable for use as the parish church, even the capitals and bases of pilasters were cut away, and arches in many instances were defaced. The inner walls of the side aisles were removed, the outer walls built considerably higher (in the plainest possible style, with large common-sashed windows), and a large span-roof was carried to the top of the latter. The outer walls were carried to a height sufficient to allow of very deep galleries being put in, these being carried round the four sides of the building, with the pulpit in the centre. To complete the transformation, a flat plaster ceiling was put right across the whole building, and all the available space was packed with narrow, closely arranged seats. The chancel arch was built up, the chancel itself having been allowed to go to ruin, and only about 20 feet of it remaining at its original height. The beautiful carved work in the arch of several of the cathedral windows was in several instances cut off by the new plaster ceiling, leaving only the plain mullions visible. This, then, was the condition of the building before the restoration scheme, now being carried into effect, was organised. The avowed object of this scheme is, "while conserving what still exists of the ancient fabric, to bring back, by a judicious restoration, as much as possible of its pristine beauty, and at the same time make it more suitable for public worship."

This movement originated with the late Rev. Alexander Gardner, one of the ministers of the cathedral, who endeavoured to get something done in the way of restoration. He instructed Mr. John Honeyman, R.S.A., Glasgow, to prepare plans; but Mr. Gardner's death took place before these could be carried out. It was then found that Mr. Gardner had left his money for the purpose of erecting a new church in connection with the Church of Scotland. While this fact temporarily suspended any operations in the way of restoration, it was due to this provision in Mr. Gardner's settlement that active measures were finally adopted. The new church will accommodate over 600 persons, and by this means the reduction of sittings in the cathedral involved by the restoration will be more than made good. This difficulty having been overcome, the restoration scheme was again brought forward and received a fresh impetus by the offer of Mr. James A. Campbell, of Stracathro, M.P., of a subscription of 1,000*l.* The first estimated cost of 10,000*l.* has now been subscribed. Subsequently it was thought advisable to make an addition, which could be done without injury to the general symmetry, for the purpose of partly meeting the large curtailment of the sitting accommodation caused by the removal of the galleries of the 1805-1807 alterations, and the introduction of more commodious seats. This addition entailed a further expenditure, estimated at 2,100*l.*, which has still to be met. The work of restoration upon Mr. Honeyman's plans has progressed so far that the memorial-stone was laid on Saturday, with Masonic ceremony. The preliminary operations have resulted in several interesting discoveries. First of all, when the plaster ceiling was removed, the old clerestory was found to be almost uninjured. When the old side walls were taken down it found that they rested on foundations composed of weath worn stones, with a little clay amongst them, a few stone coff cut across to suit the thickness of the wall, and a few incis slabs, two of which have been preserved. In the foundati of the west gable of the south aisle there were also foun number of carved stones. These had evidently formed p of a Norman building which had stood on the same s previous to the erection of the present cathedral. A numb of carved arch stones were also unearthed; and in a p of the chancel wall, which had to be taken down owi to its decayed condition, were found several other pie of Norman work, built into the old wall, and s retaining traces of coloured decoration. Another curio feature revealed in the course of the operations is the dispar in the quality of the work of the old building. Apparently t original structure was designed on very handsome lines, b for some reason or other—possibly the want of funds—t original intentions have not been carried out in their entire and the building at some points is inferior to the predomina style. This point has greatly puzzled archæologists who ha examined the cathedral.

The chancel, however, was not one of the portions of t building which suffered in this manner. It was a very beautif and delicate piece of work, and one of the prettiest examples Early English skill that is to be met with. The design is very beautiful one, and the fragment of the chancel th remains is sufficiently preserved to admit of the same desig being continued throughout the portion which it is n necessary to rebuild. The cathedral was evidently erecte during the first half of the thirteenth century, and the chanc belongs to the same period. In the restoration scheme th composition of the windows is repeated right along each sid and though no trace of the east gable remains, the same sty of treatment has been adopted for the gable. The roof is to b of oak, embellished with carved work. The chancel has no been built up to the height at which the memorial-stone wa placed on Saturday.

In planning the restorations the architect has endeavoure to leave the old masonry untouched as far as possible, and has only been interfered with for structural reasons. Th stone used is from the locality, and appears to be exactly th same kind that was used originally in the building. Th principal entrance will be by a very handsome porch at th north side of the church. Doors for egress are provided other points—one from the new north aisle and one from th south transept, in addition to the great western door, which ha been left intact. The new stonework is dressed, both insid and out, in keeping with the general handsome character of th old masonry. The restoration of the aisles involved a fres design, as there was nothing left to guide the architect as to thei former appearance. The outside walls have been brought dow to their proper height, and this has added considerably to th apparent height of the famous round tower of the cathedra The new work in the aisles is in keeping with the character o the old building. They are already completed and partl roofed. Now that the ceiling has been removed and the plac opened up the handsome proportions of the building, previousl obscured, have been revealed. For the old foundations i various parts of the structure a bed of concrete has been sub stituted. The cathedral, as restored, will accommodate ove a thousand persons in a comfortable manner. It is hoped tha it will be ready for occupation by this time next year.

The round tower, already mentioned, is of older date than the cathedral, to the south-west angle of which it is attached. It is supposed to date from Kenneth's reign (971-95), and is a memorial of Brechin's early connection with Ireland. The tower rises from a round, square-edged plinth to a height of 86¾ feet, or, including the later conical stone roof, 101¾ feet. It is perfectly circular throughout, tapering regularly from an internal diameter of 7 2-3 feet at the base to one of 6 7-8 feet at the top, while the thickness of the walls also diminishes from 4 1-6 feet to 2 5-6 feet. It is built in sixty irregular courses of blocks of reddish grey sandstone, dressed to the curve, but squared at neither top nor bottom. Within, string-courses divide it into seven storeys, the topmost being lighted by four apertures facing the cardinal points. The western doorway, 6 2-3 feet from the ground, has inclined jambs and a semicircular head, all three hewn from single blocks. The arch is rudely sculptured with a crucifix, and each jamb with a bishop bearing a pastoral staff. Each corner of the sill is sculptured with a nondescript crouched animal.

The square, five-storied tower of the cathedral, with its north-east belfry turret and octagonal dormer-windowed spire, has a total height of 128 feet, and was built by Bishop Patrick.

The Tower on Leith Hill, Kent, is being restored under the direction of Mr. Evelyn, the Lord of the Manor. It was erected in 1766 by Richard Hull.

TESSERÆ.

The Perpendicular Style.

WHAT is called the Perpendicular might as well, or with still greater propriety, be termed the Panelled style of Gothic, it deriving its peculiar character most decidedly from a system of panelling. It is the division of surfaces into sunk moulded compartments which is by far the more obvious and triking characteristic of that mode of Gothic. The name of Perpendicular, on the contrary, applies not so much to the eneral physiognomy as to the lineation or prevalence of pright lines in the tracery of the windows. In fact, horizonality expresses itself quite as much or even still more strongly han perpendicularity, owing to the openings, arches as well as doors and windows, being framed into square-headed compartments forming panels upon a larger scale. As frequently as not the windows themselves are actually square-headed, and whether so or not, their "lights" form a congeries of square-headed panels, differing from others only in being perforated and glazed. Horizontality again manifests itself plainly enough in the transoming of the windows, so that together with square-headiness and panelling, it characterises the style far more distinctly than perpendicularity does. Still, as Perpendicular is the designation which has now generally obtained in this country, it may as well be allowed to remain undisturbed, it being highly inconvenient to be always altering terms which, whether correct or not, answer the purpose of mere names.

Telford the Engineer.

Thomas Telford was born in 1757, and commenced life as a shepherd-boy in Eskdale; but his early and eager love of knowledge led him to seek abroad an occupation more suited to his inclinations. He first repaired to Edinburgh, where he studied architecture with unremitting application, although he must have earned his daily bread by the labour of his hands. In 1782 he was emboldened to try his fortune in London, and was (as he states in his life, written by himself) fortunate enough to be employed at the quadrangle at Somerset House, where he acquired much practical information, both in the useful and ornamental branches of architecture. After a residence of two years in London he was engaged in superintending the building of a house in the Portsmouth dockyard. "During the three years," he remarks, "that I attended the building of the commissioner's house, and of a new chapel in the dockyard, I had an opportunity of observing the various operations necessary in the foundation and construction of graving docks, wharf-walls and similar works, which afterwards became my chief occupation." When he left Portsmouth he was appointed surveyor to the county of Salop, and to this and the connections formed at this time he was indebted for a very favourable opening of his career as a civil engineer. His chief attention was devoted to building and repairing bridges and other works, but he also built several churches and other architectural edifices. Telford's progress in his professional career, though not rapid, was steady and certain, and every new opportunity of exercising his talents contributed to extend a reputation which at length became unrivalled—not to his talents alone though, be it said, but by downright hard work united with them. To enumerate all his works would take a long time; but his principal ones are the Holyhead Road (upon which he himself set higher value than any other), the Pont-y-Casylte aqueduct and the Menai bridge, the most imperishable monument of Telford's fame. The defects of his early education he had endeavoured to remedy in his maturer years. He taught himself Latin, French, German and mathematics, in which he was a proficient, but relied more for the dimensions of his works upon practical experiment than upon calculation; but his reason for this preference may have been, and most likely was, his distrust of the data furnished him by mathematical experimenters in those days. Telford was the first president of the Institution of Civil Engineers, and died still holding that office in 1834, aged seventy-seven years.

St. Paul's Churchyard.

From time to time during many years schemes of improvement relating to St. Paul's Churchyard have been put forth. One of them, nearly a century ago, by George Dance, besides greatly extending and symmetrising the area immediately around the church, comprised a new street carried from the east end of the churchyard in a straight line to the Monument, in order to relieve the excessive traffic through Cheapside. There was something happy in the idea of approximating, as it were, two of Wren's works by forming a vista, one end of which would have been terminated by the Monument and the other by St. Paul's. Some years afterwards James Elmes brought forward another scheme, confined to the improvement of the churchyard, which was ingeniously shaped to follow the outline of the plan of the cathedral, there being a small crescent facing each of the transepts and its semicircular portico. The scheme was to have been promoted by the Duke of York, but he died before any steps could be taken in it, and it dropped at once.

The Sistine Ceiling.

It is curious to remark how the elements and theories of composition which Michel Angelo at the commencement of his career designed to realise in the frustrated monument of Pope Julius, welled up again in his mind and found place and purpose in the Sistine ceiling. Of that mausoleum the grandest ornaments were to have been statues, of colossal magnitude, of prophets and apostles, paired alternately with ethical and philosophical abstractions in feminine personification; Paul and Moses with the virtues of active and of contemplative life, and so forth. Again, in the sketch that remains to us of the monument (Agincourt) we see the same architectural framework of the seated figures united with decorative infantine forms, supporters of piers and salient entablatures; and yet again another series of figures, subordinate in expression and intermediate in scale, but aiding by happy adjustment in both these respects to give relief and force to the centres of idealised thought. The pairs of boys that support the salient cornice on either side of the several thrones are painted, like pier and cornice, to appear as if sculptured in white marble; the larger figures that simply surmount these piers represent bronze, and are composed with reference to the large-seated prophet or sibyl whose throne they pertain to. The perspective of the piers and their cornices is independent for each niche or throne. Each has its own vanishing point, as if the spectator stood exactly opposite to it. The boys below that support the name-labels are painted in natural colours.

The Alnwick Obelisk.

This obelisk was found in one of the villages of the Thebaïd, and presented to Lord Prudhoe during his visit to Egypt in 1838, whence it has been transferred to the museum of Alnwick Castle. It is of the red granite of Upper Egypt, and measures from its base to the extremity of its broken apex 7 feet 3 inches. The greatest width is 9¾ inches, and 9 inches on the two other sides of the base. The base of the pyramidion on two sides is 8¾ inches, and on the other two 8¼. In this irregularity of the transverse dimensions it resembles all the other monuments of the same class, no less than in its general proportions, the base being about a tenth of the entire height. It bears the nomen and prenomen of Amonoph II., who ascended the throne of Thebes in the 160th year of Manetho's eighteenth dynasty as the immediate successor of Thothmes III., Mœris or Menophres, the author of the canicular period which goes by his name, and originates in the quadriennium B.C. 1325. We can hardly mistake in referring the present monument to the end of the fourteenth century before the Christian era, while Amonoph III., whose remains are abundant, more particularly in our national collection, is the accredited Memnon of the Greek and Roman writers. Amonoph II., whose remains are scarce in the same ratio, is the Memnon of the Egyptian historian Manetho, whose Rathotis corresponds in name and place with the lower shield (Rathek), the third Amonoph of the hieroglyphic tablets, and of the statues in the plains of Goorna. The hieroglyphics of this interesting monument are nearly allied to that kind which may be strictly denominated "incavo," there being scarcely any rotundity within the outline—a style unusual in monuments of this class and period. A peculiar feature of this obelisk is that it is inscribed only on one face; and, excepting two characters, which are a little doubtful (owing rather to the slight incavo of the sculpture than to any subsequent injury), the inscription is entire. As usual, however, on many of the remains of the Amonoph family, the nomen, where it is most prominent, appears to have been inserted to the prejudice of some former characters, the surface within the shield having been sufficiently lowered to obliterate whatever was engraved before the present characters were inserted, as may be easily ascertained by placing a ruler along the surface; whilst the same nomen also occurs among the small hieroglyphics on the upper part, which appears not to be an after work. The after-insertion of the nomen in all the known remains of Amonoph III., the grandson of the then Pharaoh, to the prejudice of a more ancient one which agreed with the prenomen of Amonoph III., is a fact which has not been sufficiently considered nor satisfactorily explained; and the problem in this instance extends to the second Amonoph, while the difficulty seems to be increased by the circumstance of the nomen on the upper part being of the original work. Did the Amonophs, by the insertion of a name founded on that of their tutelar divinity Amon, mean to supersede the worship of the divinity from whom the obliterated royal name was derived? An obelisk of so interesting a reign, and certainly the only one of Amonoph II., of whom so few remains are to be found amidst the abundant relics of the eighteenth dynasty, offers many peculiarities for solution, among which the fact of the surface within the contour of the sculptures being nearly flat is not the least worthy of notice—a kind of sculpture found only in tombs and on stelæ, generally of the age of Psammetichus, for the significant decorations on the walls of Egyptian temples are either in low relief (basso-relievo) or in a kind of sculpture peculiar to Egypt, which may be denominated incavo-relievo or sunk relief, in which the figure is expressed in relief within the outline, but never so prominent as to exceed the general surface.

Influence of Place on Inspiration.

Certain localities, as mountain tops, the seaside, the shores of rivers and rapid brooks, natural parks of oak and pine, where the ground is smooth and unencumbered, are excitants of inspiration. Every artist knows well some favourite retirement. And yet the experience of some good artists has taught them to prefer the smallest and plainest chamber, with one chair and one table, and with no outlook, to these picturesque liberties. William Blake said, "Natural objects always did, and do, weaken, deaden and obliterate imagination in me." And Sir Joshua Reynolds had no pleasure in Richmond; he used to say "the human face was his landscape." These indulgences are to be used with great caution. Allston, the American painter, rarely left his studio by day. An old friend took him one fine afternoon a spacious circuit into the country, and he painted two or three pictures as the fruits of that drive. But he made it a rule not to go to the city on two consecutive days. One was rest; more was lost time. The times of force must be well husbanded, and the wise student will remember the prudence of Sir Tristram in "Morte d'Arthur," who, having received from the fairy an enchantment of six hours of growing strength every day, took care to fight in the hours when his strength increased, since from noon to night his strength abated. What prudence, again, does every artist, every scholar, need in the security of his easel or his desk. These must be remote from the work of the house, and from all knowledge of the feet that come and go therein. Allston, it is said, had two or three rooms in different parts of Boston, where he could not be found.

Francisco Zurbaran.

The life of Zurbaran presents us with one of the numberless histories of men who, born in situations apparently unpropitious for the development of talent, have nevertheless attained to the highest glory in their profession. He was the son of a country proprietor, and any who are acquainted with the state of that class in Spain (bad as it is now, it was worse then), will consider the eminence to which he advanced as almost a work of magic. He was born a painter, and his early efforts attracted so much notice that his parents sent him to Seville to study under Rodelas. Before attaining the age of thirty he had completed the chapel of St. Peter in the cathedral and the famous altar-piece for the collegiate church of St. Thomas Aquinas, the latter of which is considered his masterpiece. The paintings of the Carthuja, at Xerez, were executed in his thirty-fifth year. Neither Murillo nor Zurbaran ever left Spain, and yet their notions of the art were strikingly opposed. Zurbaran copied nobody, Murillo everybody. The first was satisfied to spend days over a white mantle fixed on a model, and occupy himself on a single figure; Murillo was grouping and varying and catching at every new form and expression, trusting to his own genius to improve upon nature. Zurbaran threw a strong contrast of light and darkness on the principal figure in the first plane, and went no farther. Murillo aimed at and succeeded in conveying aerial perspective to the farthest distance in the sky, and sought to make his outlines melt into the air. Two paintings for the Geronomite convent of Bournos, by Zurbaran, had the outline of the figures rigidly marked on the plain side of the canvas, so hard and inflexible was the system of the painter. Both were fine colourists and both true to nature, but Murillo toned down his pictures by glazing, and Zurbaran passed a wash over the strong blue and white he employed, and detached the figures by painting the distances lightly. In point of composition Zurbaran was inferior to Murillo or Velasquez. Others, however, and particularly the French, reverse the order, and quote Zurbaran, Velasquez and Murillo. In England and at Madrid Velasquez is generally put before either Murillo or Zurbaran.

Thomas Bewick.

Bewick introduced a method of working which was altogether contrary to the first principles of the art; he rejected the use of bold outlines, which ought always in designs such as he chiefly committed to the block to have distinguished engravings on wood, and in their place he adopted a mode of producing indefinite shades which in many instances produced the worst effect possible, because not bounded by outlines at all. It is thus that sometimes we cannot easily determine whether a man has a hat upon his head or merely a bundle of straw which has taken somewhat the form of a hat. His designs of rural life and scenery are often admirably conceived, but in most cases he has failed to carry out his own design in the process of engraving because he was not master of his tools—at least, by no means so much so as the engravers of a later time—or perhaps because he had fallen upon a bad style of working. Bewick is praised for having first given something of detail to the trees in woodcuts, but it must be confessed that in a great number of instances his success is far from complete: the trees in his distances, if it were not sometimes for the shape of the mass, might be taken for haystacks, and the detail of the foliage of trees which are more in the foreground is too often disproportionate to the trees themselves and to the rest of the picture, and gives them too much the appearance of bushes. Bewick's undefined shading was effective only in producing the soft plumage of birds and the hair and fur of animals, and it was in these, particularly the former, that he excelled. There can be no stronger proof of the injudiciousness of his style of wood-engraving than the circumstance that none of his successors followed him in it. Even modern engravings of birds and animals are far superior to those which were executed by Bewick, although none of those which have been attempted to be engraved in imitation of his peculiar style. It may be observed that most of Bewick's ardent admirers praise his execution for what really belongs to his design alone, and what probably would have been far more effective in a drawing than it is in his engraving. In spite, however, of all this, Bewick deserves a high place in the history of wood-engraving—first, because he struck out a new and original path, and so brought the art into reputation, and, secondly, because his influence led the way to the introduction of that more minute detail and that rich finish which afterwards characterised the style of English engravers.

GENERAL.

The Earl of Northbrook is offering a prize to be competed for by amateur painters in Hampshire at the annual exhibition of the Winchester Art Society next month. The subject is to be "Autumn."

Mr. Henry Spencer Ashbee, F.S.A., of Fowlers Park, Hawkhurst, Kent, and 119 and 120 London Wall, who died on July 29, left property valued at 63,384*l.* 19*s.* 5*d.* He gave 5,000*l.* and certain pieces of plate each to the Curriers' Company and the Armourers and Brasiers' Company, his paintings and water-colours to the English nation, and his antiquities, books, &c., to the British Museum.

Mr. Talfourd Ely, F.S.A., who has been engaged on the excavation of a Roman building in the "Towncil Field," Hayling Island, has now laid open the foundations of the outer wall for a distance of over 80 feet north of the point reached in 1898. The wall then turns, he says, at a right angle westwards, in which direction he has followed it for 60 feet. He has also excavated one of the rooms, 18 feet square, where he found a brooch of bronze and blue enamel.

Derwentwater House, Acton, will henceforth be utilised as a Liberal club.

The Francois Vase in the Florence Museum has been accidentally broken in pieces. It was an Etruscan production dating probably from 600 B.C. It belonged to an archæologist named François, from whom it was purchased in 1844 by the Grand Duke.

The New Technical Institute at Harrogate, which has been built at a cost of 6,000*l.*, was formally declared open by the Mayoress (Mrs. J. A. Myrtle) on Saturday.

The Death is announced of Theodore Friedl, the Austrian sculptor, who was the author of a large number of statues and decorative works.

George Cruikshank's House, No. 263 Hampstead Road, will not at present be demolished to make room for railway works.

The Memorial-Stone in connection with the restoration of Brechin Cathedral was laid with full masonic honours by the Hon. James Hozier, M.P., grand master mason of Scotland, on Saturday last. About 400 freemasons joined in the procession. The works are being carried out by Messrs. J. H White & Sons, of Glasgow, under the direction of Mr. Honeyman, R.S.A.

The Yorkshire Union of Artists have held an exhibition at the Scarborough School of Art during the past seven weeks, which has proved even a greater failure than was anticipated. When it was decided to hold the exhibition at Scarborough, the Union anticipated a deficit of 100*l*, but this only represents two-thirds of the actual loss. The attendances have been the smallest experienced by the Union during its thirteen years' existence.

A Clerestory Window on the south side of the only remaining bay of the nave has been opened out in the church of St. Bartholomew the Great, Smithfield, within the last few days. It probably dates from about 1200, and would seem to have been bricked up in 1628, when the present tower was erected, into which it now opens.

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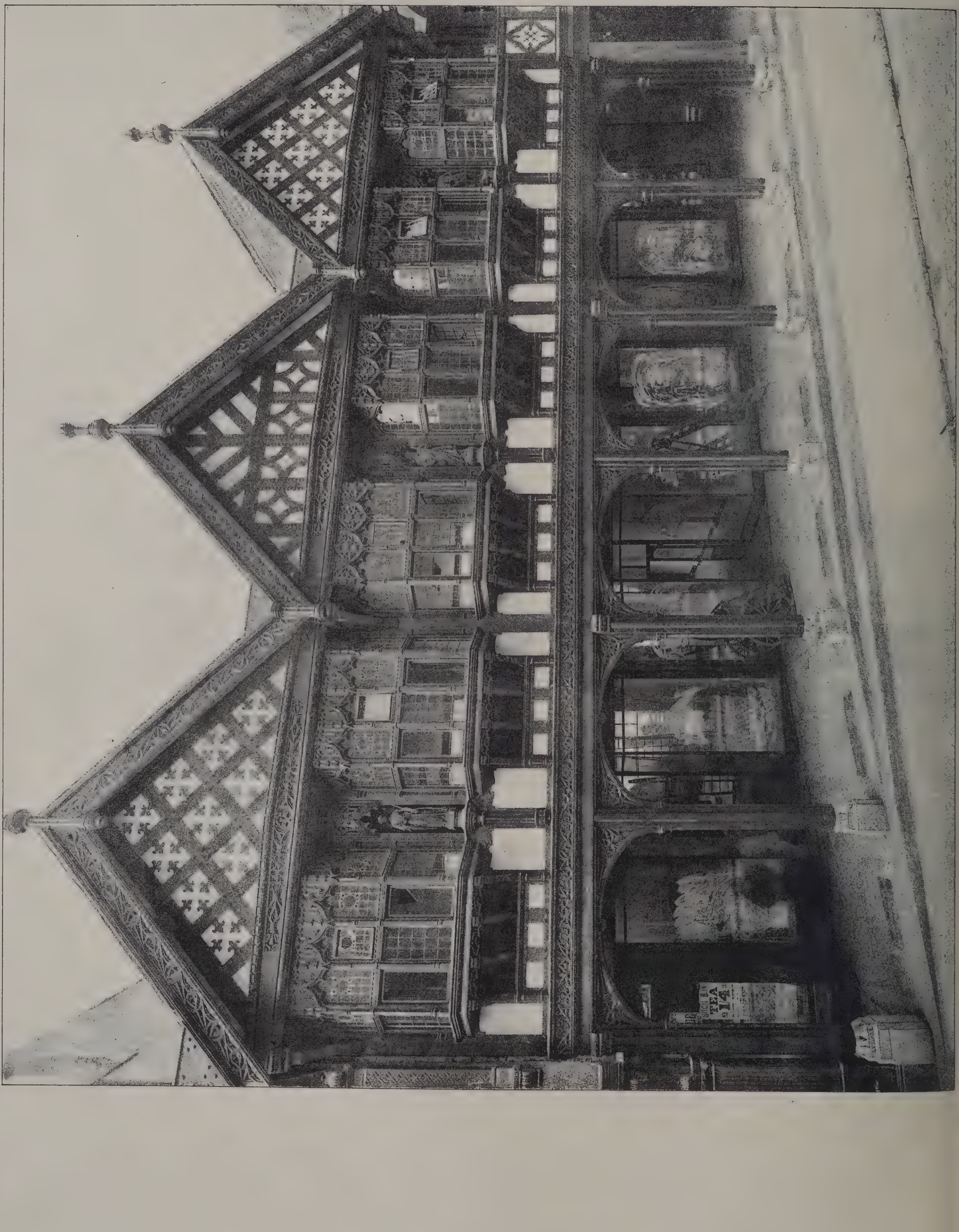

DOUGLAS & MINSHULL.

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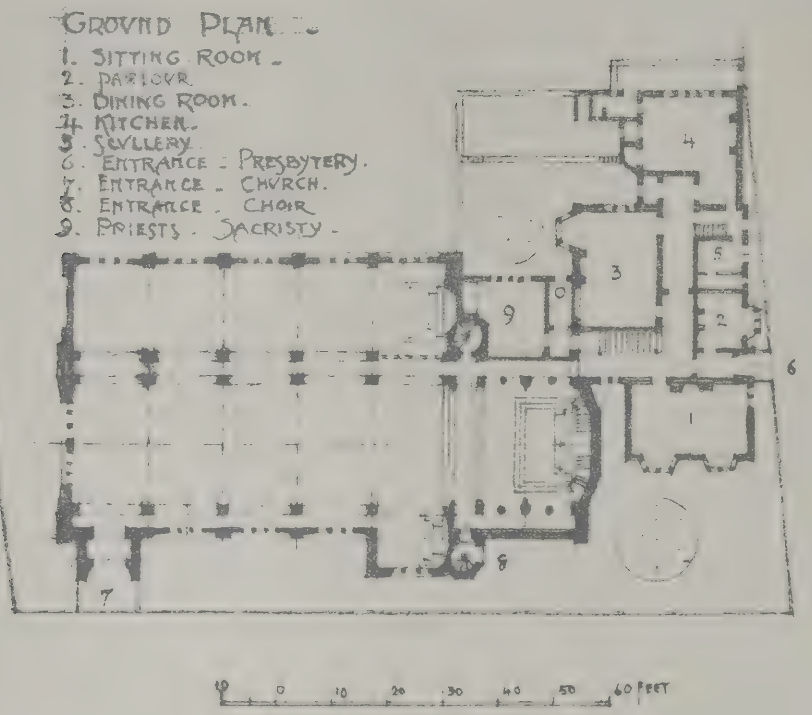

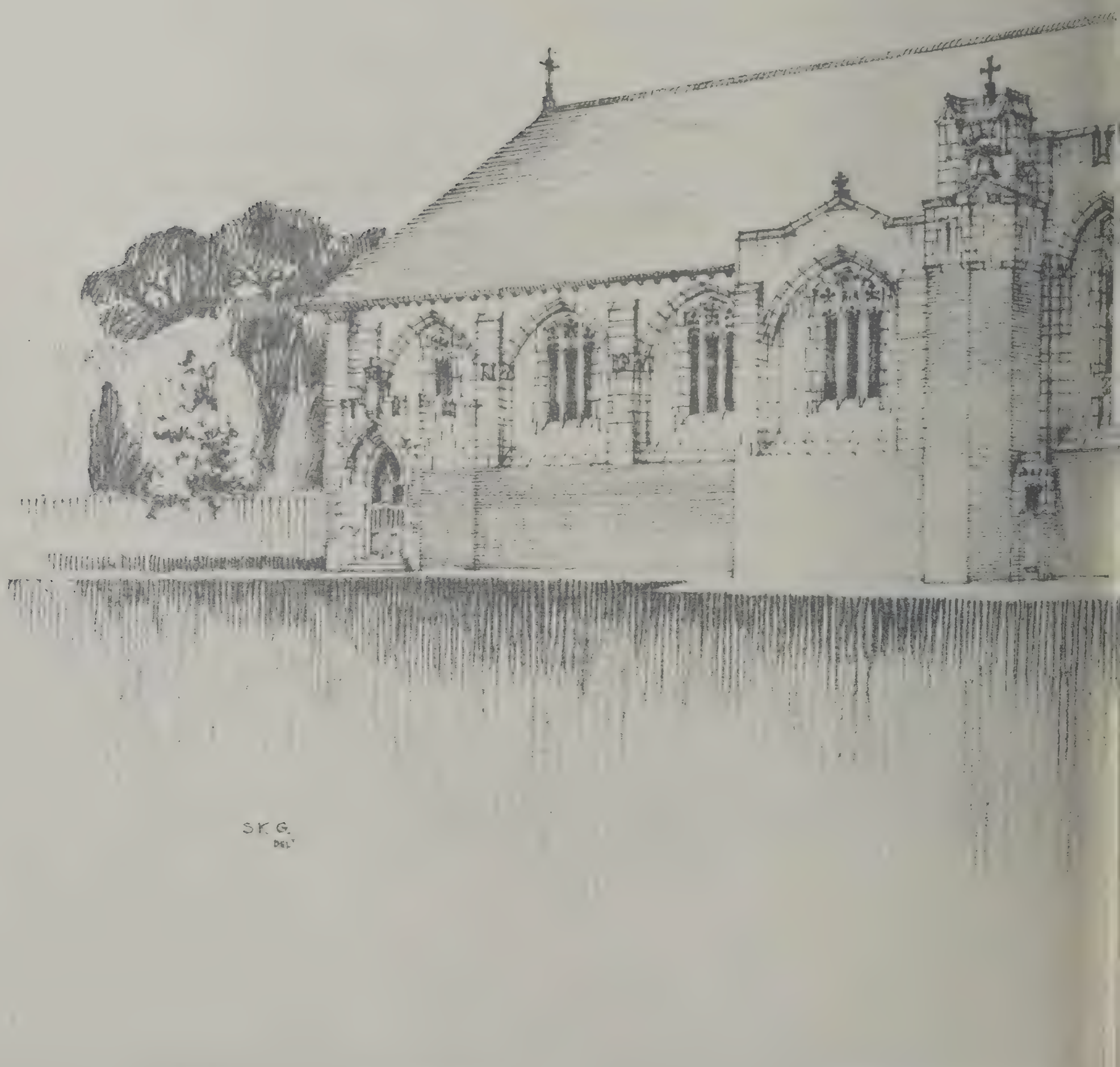

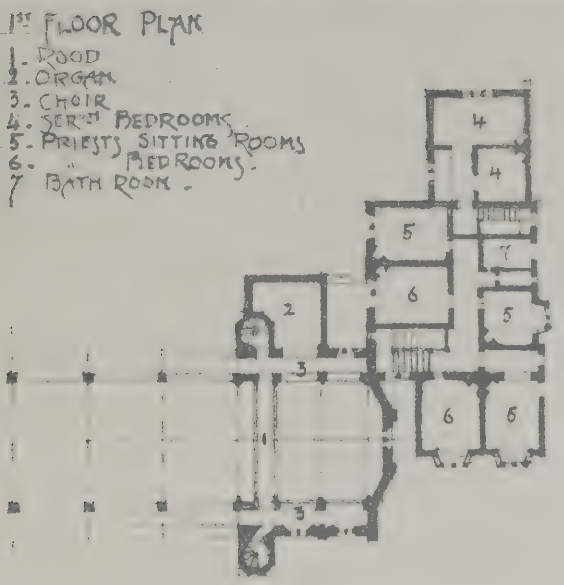

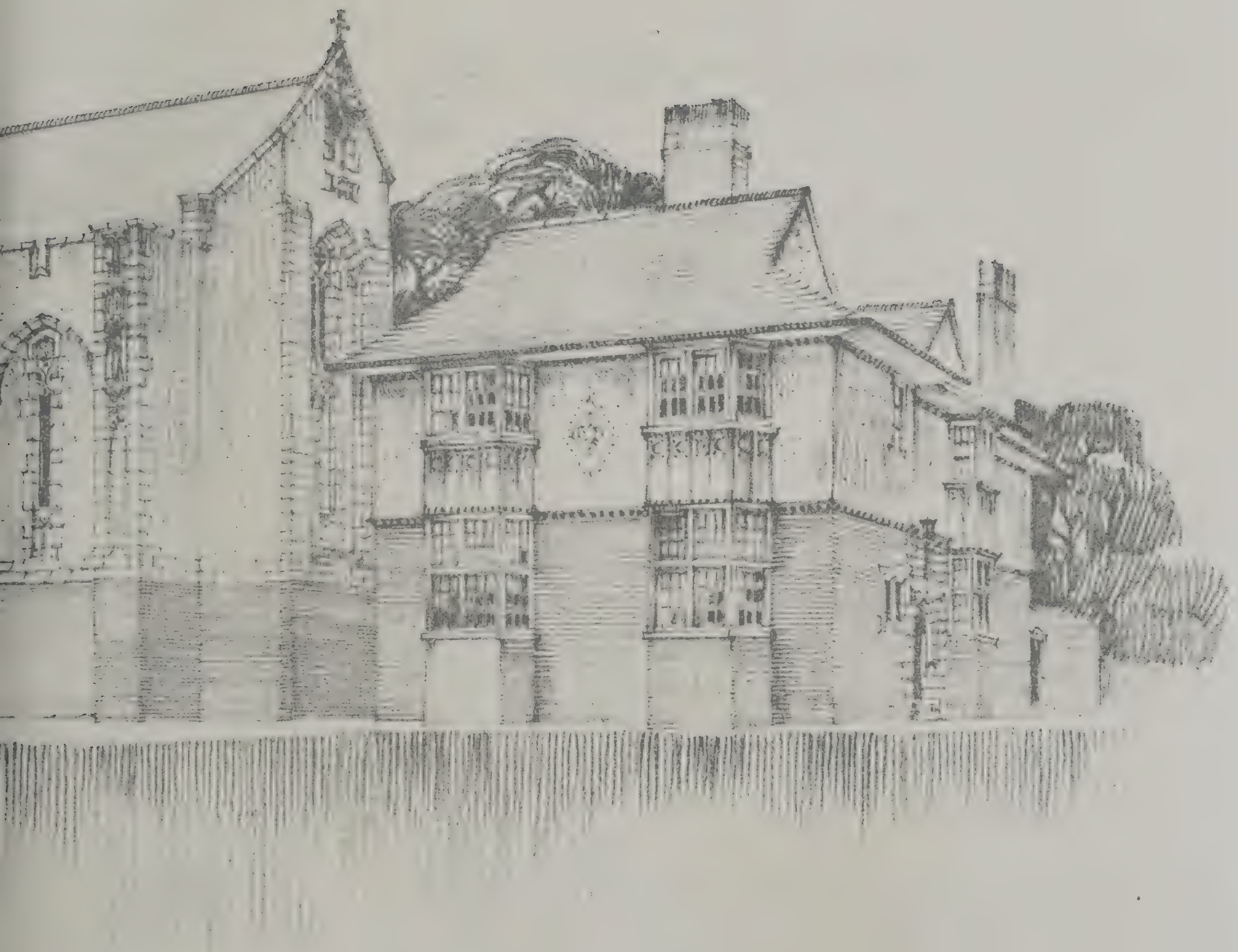

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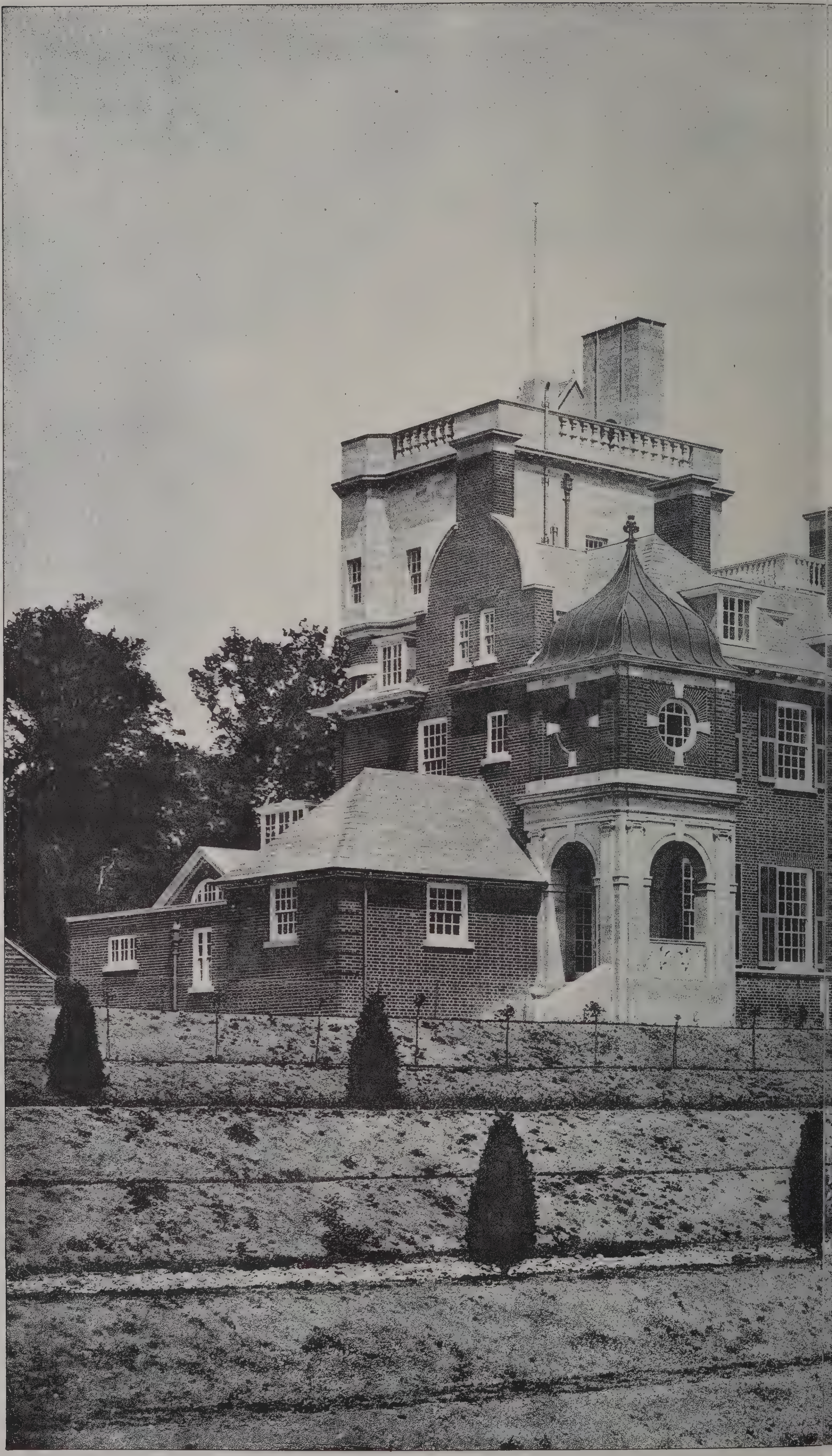

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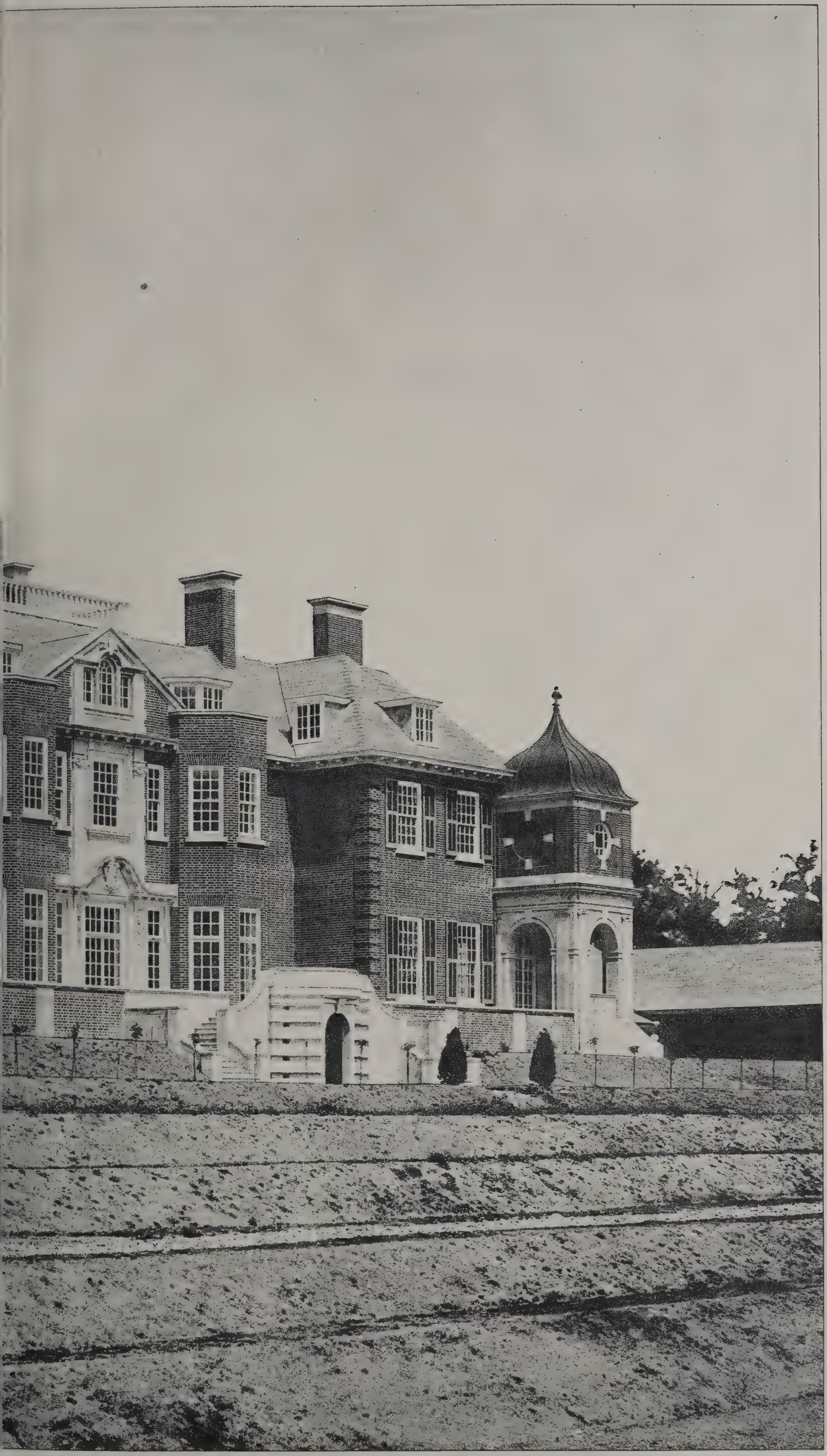
"THE TOWERS," PANGB

J. BELHE



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, LOOKING NORTH-EAST.

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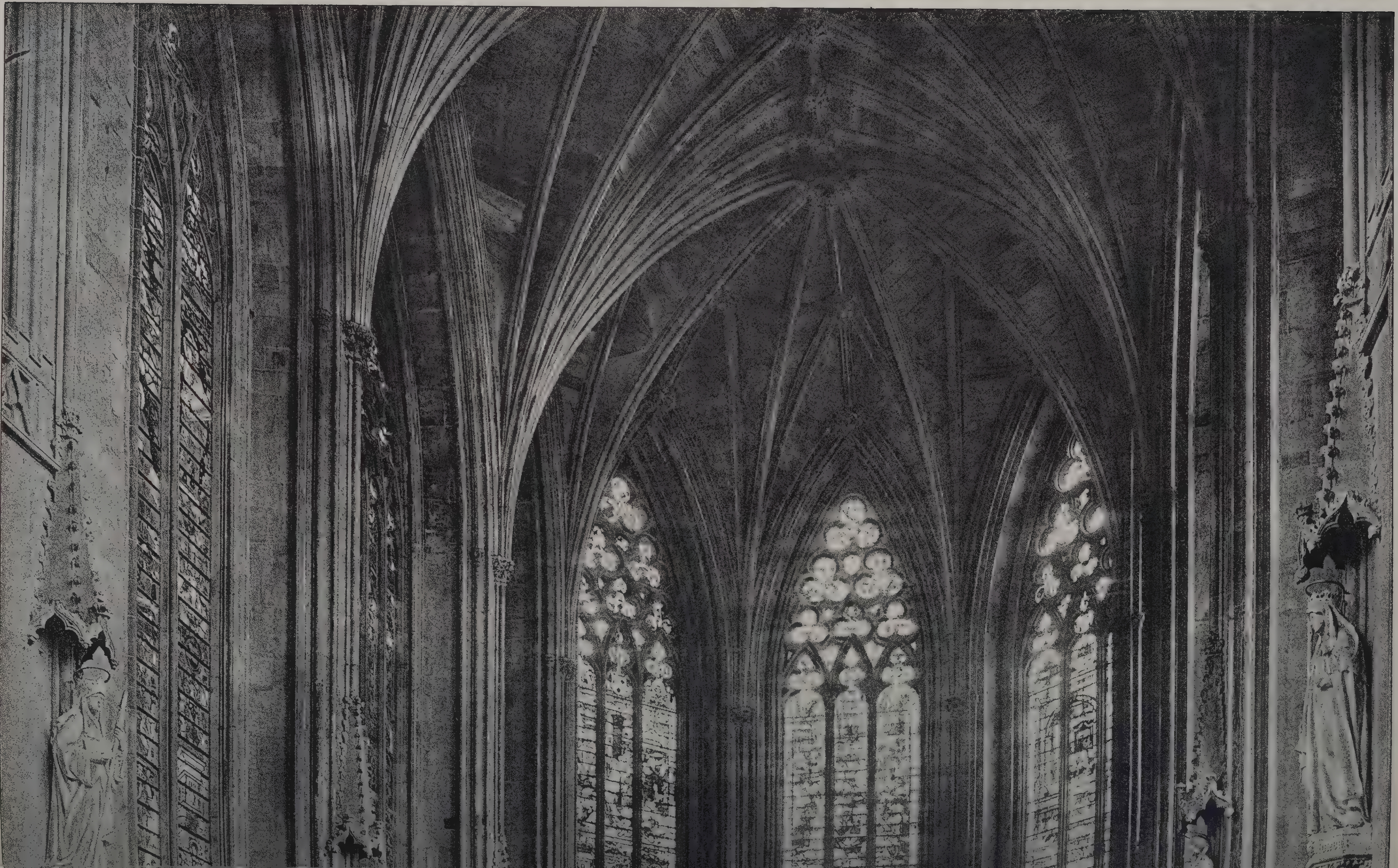

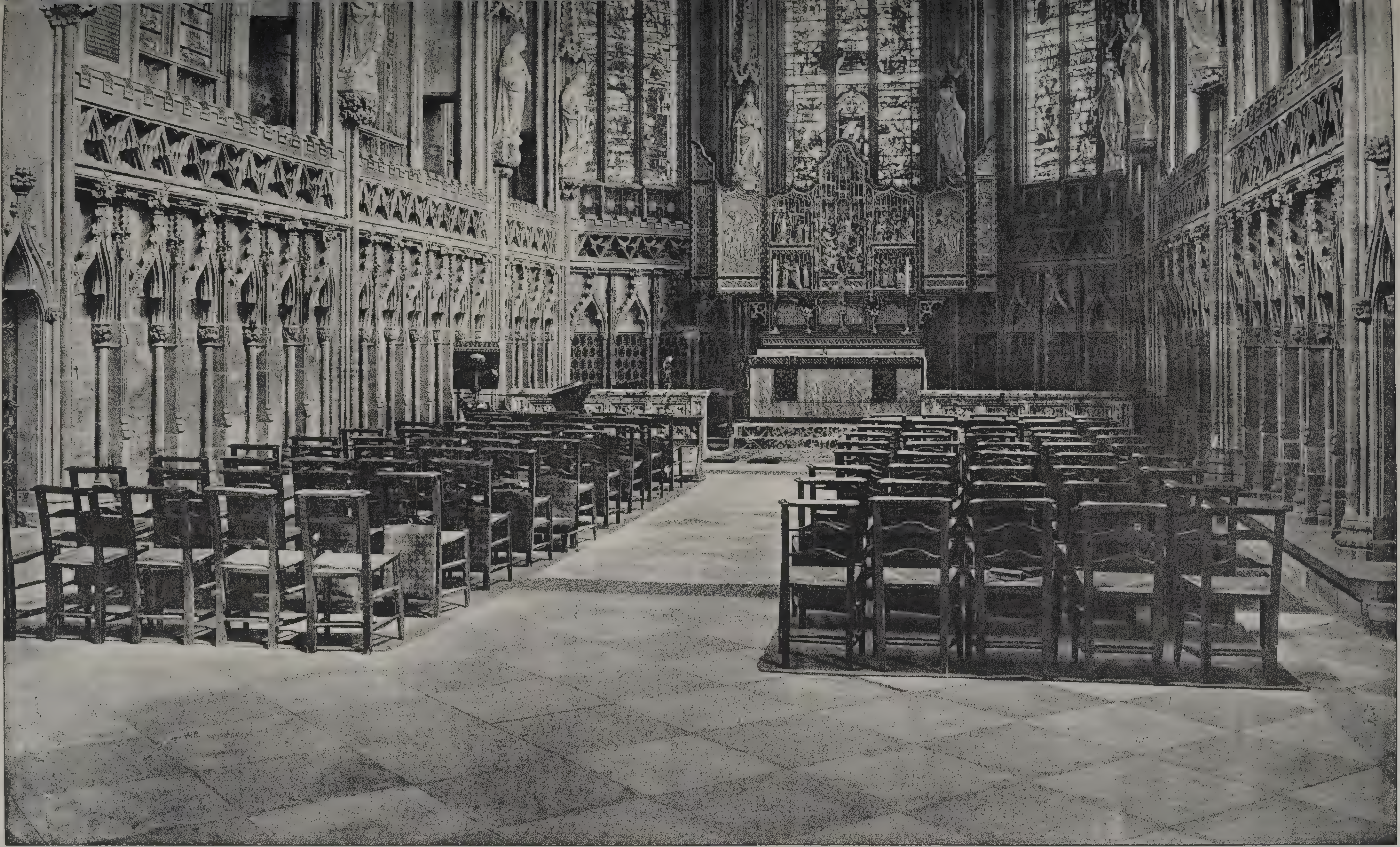

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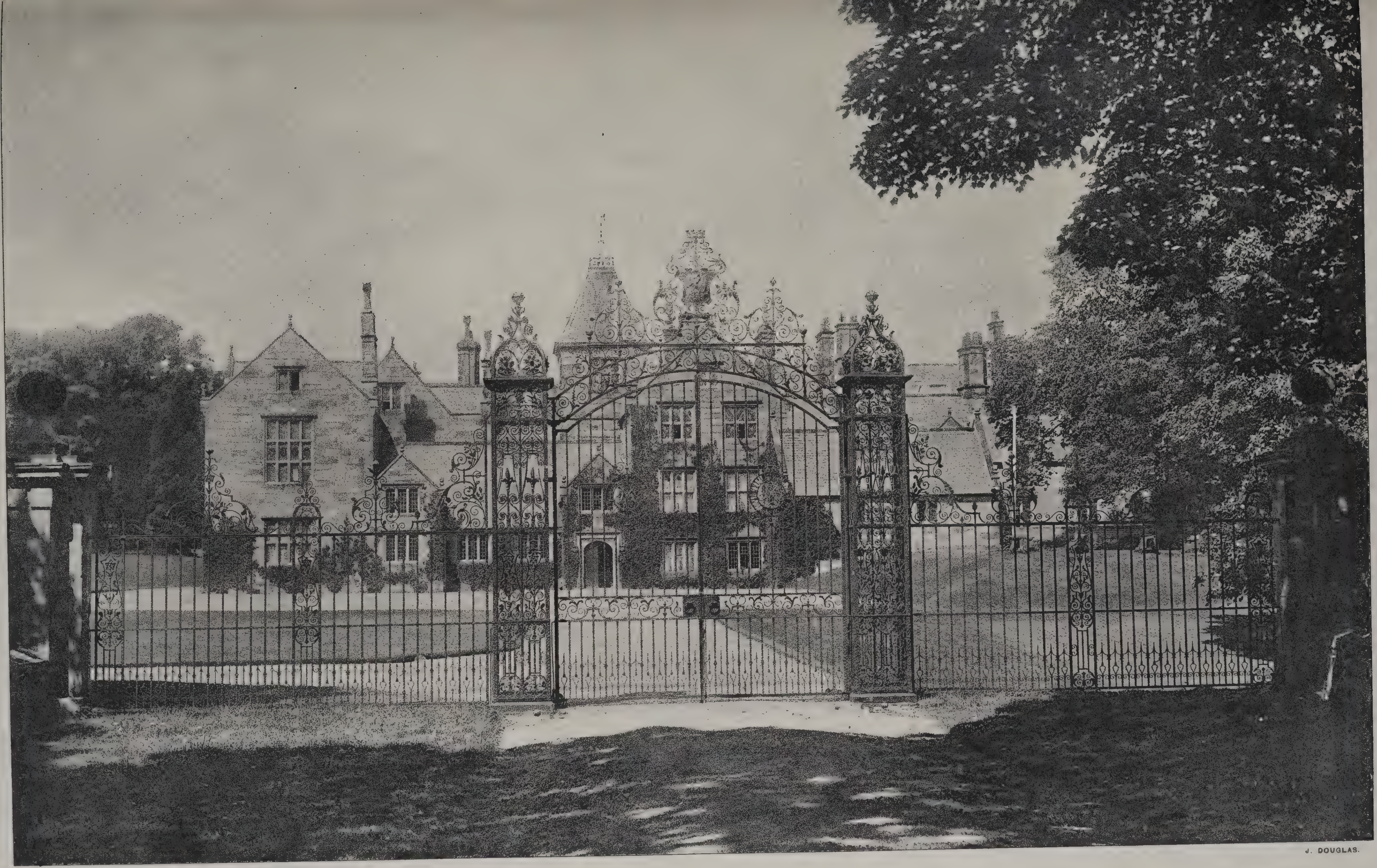
Cathedral Series, No. 301.—Lichfield: The Lady Chapel.



J. DOUGLAS.

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MOSTYN HALL, FLINTSHIRE, NORTH WALES.

GATES TO FORECOURT.

The Architect.

THE WEEK.

Some weeks ago it was proposed to seek Parliamentary powers to enable the Corporation of Manchester to carry out three great schemes of street improvements, on which the outlay would be at least 1,000,000*l.* sterling. The first, which was the costliest, included alterations in Market Street, Corporation Street, Hanging Ditch, Old Millgate, Market Place, Cateaton Street on the southern side, Victoria Street and Old Millgate. That scheme was soon abandoned because it was said it had not received sufficient consideration. The second scheme related to the widening of Cannon Street between Corporation Street and Old Millgate, and the widening of Cateaton Street on the southern side of Old Millgate and Victoria Street, but it was also rejected. By the third scheme it was proposed to widen Cannon Street down to Victoria Street, so that the greater part of it would be 60 feet wide. That received more approval. On Thursday in last week it was again brought before the general purposes committee of the City Council, when, after a long discussion, the majority of the members decided that the scheme should be included in the intended application to Parliament in the next ensuing session. The cost of the acquisition of the property, &c., is calculated at 200,000*l.*

It is generally known that an immense number of houses exist in Liverpool which are unfitted for habitation. Some reports which were lately prepared for the Corporation will suggest the extent of the evil. The insanitary houses have been divided into two classes. In the first class are comprised houses situated in courts less than 15 feet wide throughout, or houses fronting the street, but contiguous to such courts and being practically identical with them in their structure. They were probably all erected prior to 1842, and before any building regulations or by-laws were in force, or the need for their provisions appreciated. There are no less than 7,434 of those houses. The second class includes houses built since 1842, and they number 750. Consequently 8,134 houses require to be removed. Mr. Turton, the deputy surveyor, has estimated the cost of purchasing the houses and sites at 279,000*l.*, but the amount might be considerably reduced if the owners were allowed to retain the sites. As to rebuilding, experience does not warrant the belief that builders would be disposed to erect dwellings for any other than the better class of displaced tenants as a speculation. The difficulty is to obtain powers under the Housing of the Working Classes Act of 1890, or under a local Act. The Town Clerk's conclusions are that a large scheme for demolition and rebuilding can more completely be carried out under Part I. of the Housing of the Working Classes Act, 1890; that a moderate-sized scheme could be more economically and expeditiously carried out under the local Acts, aided by the powers given by Parts II. and III. of the 1890 Act, for obtaining the demolition of "obstructive buildings," and acquiring the sites which the owners had elected to retain under their rights given by the local Act; and that isolated cases of houses which are in themselves insanitary can best be dealt with under section 32 of the Housing of the Working Classes Act, 1890.

Competitions do not appear to be satisfactorily settled in Australia if one for the Central Melbourne Railway Station can be taken as an example. In May 1899 three prizes of 500*l.*, 200*l.* and 100*l.* were offered for designs showing a building and roof which could be executed for 102,000*l.* The date for receiving the designs was fixed as August 31. Shortly before the period expired, and when several designs were nearly worked out, the time was extended till the end of September. An expert Board that examined the designs declared that the conditions were not entirely realised by any of the competitors, but it was recommended that prizes should be awarded as follows:—First prize, Messrs. J. Fawcett and H. P. C. Ashworth; second prize, Mr. Charles A. D'Ebro; third prize, Messrs. Wright & Pestell. It was not, however, announced that any of the designs were adopted, and apparently the premiums have not been paid to the competitors. The awards are not generally approved, and a committee that undertook to examine the plans considered the estimated cost as too low. The railway authorities have, however, for the small sum of 800*l.*, assuming it to be paid, obtained information that must at least be worth 3,000*l.*

Whatever will increase the water-supply of India is of vital importance to millions of our fellow-subjects. There are always critics and projectors with favourite plans for making water abundant. One great aid, according to the majority of such people, is the artesian well, for it is believed that in all parts of the world, including India and Australia, inexhaustible supplies of water are to be found below the surface of the ground. The late famine has furnished new opportunities to insinuate that the Government of India had neglected its duties by not resorting more frequently to artesian well-sinking. An immense mass of official papers, the director of the Geological Survey says, proves the contrary. Attempts have been made in various parts to sink artesian wells, but with indifferent success, except in the Quetta district. As a matter of fact, artesian conditions seem to be absent in the great Indo-Gangetic plains and in the peninsula proper; but in Rajputana, Gujarat and Sind the prospects of obtaining artesian water are more favourable. In the recent drought no difficulty was experienced in obtaining water in the vast plains of Gujarat, and the natives, on sinking a number of wells, found the water, only slightly brackish, within 40 or 50 feet of the surface. Experiments are in progress in several localities.

As long as flowers are employed as elements of ornament, which is likely to be as long as the world lasts, botanical studies must have interest for designers. They may not attempt an exhaustive study of the floral kingdom, but they can sometimes utilise the labours of those who undertake that task. On that account we are sure that many artists will support Professor Oliver in what he says about the necessity of having a Botanical Institute in London. When the ground in Regent's Park was granted on lease to the Royal Botanic Society care should have been taken to have a part assigned not merely for medicinal and economic plants, but, as we find at the Jardin des Plantes in Paris, for plants which can be suggestive to ornamentists. For the last-named purpose a variety of weeds can be utilised, but ordinary English gardeners hold them in terror. Professor Oliver believes that the Royal Botanic Society would entertain any plan submitted by the colleges. He says that in addition to lecture-rooms and laboratories at the institute there should be ample place for the museum and collections, and around the institute should be reserved three or four acres of ground for the use of the colleges as their botanic gardens. Suitable class houses should be erected, and frequent visits to the gardens be encouraged among the students. Whenever arrangements are considered, we trust some attention will be given to the requirements of artists, for at present there is no provision of that kind in any botanical establishment in London.

A discovery by the French explorer, M. Paul Gaudin, in Asia Minor, is considered by French archæologists to be an important link in the chain of evidence which unites Greek with Eastern culture. France has for a long time sent various investigators to that region, and among others M. Guillaume, the architect, who afterwards had charge of the Louvre, distinguished himself by his researches among the ruins. Near the river Keikus, and not far from Stratonikeia, M. Gaudin has excavated an ancient necropolis. Among the objects found in the graves were a great many which in style and character corresponded with those found by Dr. Schliemann in the lowest strata at Hissarlik, and which were assumed to mark the existence of a city of a much earlier date than the Homeric Troy. The vessels, vases and clay figures were decorated in a similar manner, and the idols were long in form, with engraved lines to indicate the features. The connection between the culture of Asia Minor and Phrygia would thus appear to be further established, not only by the evidence at Hissarlik, but also by discoveries in the eastern parts of Greece and in Cyprus.

THE PAVILION SYSTEM IN HOSPITALS.

THE question of the reconstruction of the Royal Infirmary at Manchester has assumed a new aspect, by which it ceases to be merely local. It has now acquired a character which makes it interesting, not only to architects everywhere, but to public authorities and benevolent individuals who may have to bear a part in the erection of new hospitals.

We have from time to time described the various stages in the controversy about the subject. Everyone who has visited Manchester is aware that the Royal Infirmary occupies a position which for several reasons may be considered the most important in the city. A stranger can hardly fail to see the infirmary, but he is compelled to seek out the square where the town hall stands. There is no doubt that when hospitals are allowed to assert themselves like that of Manchester, or St. George's Hospital at Hyde Park Corner, or St. Thomas's, which becomes a pendant to the Houses of Parliament in a London view, an impression favourable to the place is made on the mind of the spectator. We must conclude there is a kindly spirit in any city which devotes its valuable land in order to possess an institution to assuage the sufferings of the needy. In Manchester especially that effect was recognised, and the successive boards of management consequently were opposed to the removal of the infirmary to a different district.

There was, however, much to be said in favour of a change of site. The infirmary standing on it is too old. There are many authorities who believe that an hospital should not be allowed to endure longer than from five to ten years, and systems of construction have been devised with that end in view. There is no doubt whatever that owing to the attention which has been given to sanitation, the interior arrangements of a hospital in a very few years become obsolete and inconvenient, if they are not dangerous to the inmates. A glance at the exterior of the Manchester Infirmary is sufficient to raise a prejudice against it in the minds of all who have studied hospital planning. It is concluded to be a building which was erected in days when ventilation and drainage were outside the studies of scientific men, and the dangers of microbes as anthropophagi were unknown. It was found too that no patching or alterations while the building was occupied could remedy the evils, and rebuilding was therefore indispensable, if it were only for the sake of the patients.

When it was once granted that rebuilding must be faced, the next question was whether the old site was to be utilised or one in another part of Manchester or the suburbs? There are many associations in favour of keeping the infirmary near what appears to be the centre of the city. On the other hand, the area is too limited for the erection of a hospital, especially if the pavilion system were adopted. The ground is nevertheless coveted for commercial purposes, and if sold the money obtained for it would be adequate for the purpose of acquiring enough land elsewhere on which a hospital could be erected that would exemplify all that is known about the arrangements which are most conducive to the recovery of patients in the wards.

A controversy on the retention or abandonment of the present site was unavoidable. It has continued during some years, and as many supporters of the institution have taken part in it, it is unquestionable that the funds have suffered. From time to time compromises have been suggested, but in the opinion of many people unanimity continues to be as far off as ever.

The present board of management seem to be in favour of utilising the site of the present infirmary for an improved building. The great obstacle to the arrangement was the knowledge that a hospital on the pavilion system became impossible unless the boundaries were enlarged. On February 9 last it was accordingly decided to appoint a committee to ascertain "whether or not a hospital suitable in every way can be built on a plan other than the pavilion." The resolution was giving effect to the recommendation of the medical board. There were eleven members of the committee, of whom seven were elected by the infirmary board and four by the medical board. It was the opinion of the latter body "that it is uncertain whether the pavilion system is so absolutely necessary as it has been thought to be up to the present time, and it may be well to consider whether some other system requiring less ground may not be adopted." It was therefore decided to have recourse to specialists in medicine and surgery. Accordingly a series of questions were addressed to the following gentlemen:—Lord Lister, Sir William Mac Cormac, Sir Thomas Smith, Sir Samuel Wilkes, Professor McEwen, Professor Thomas Annandale, Dr. T. E. Clifford Allbutt, Dr. Goodhart, Mr. Frederic Treves, Mr. Howard Marsh and Mr. Timothy Holmes.

The questions which were proposed have not yet been made public. We cannot, therefore, say whether they applied to the pavilion system in general or merely to the utilisation of it, or the reverse, in one case in Manchester. No doubt the advocates of the system consider it alone is perfect; but conclusions of that kind have done much harm in architecture. It is through upholding the perfection of a style, or a variation of a style, that design has been fettered and monotony has prevailed. Human invention is not so weak as to be incompetent to produce only one type of form or plan. Moreover, if there are shortcomings compensatory arrangements are feasible by which they can be turned from defects into benefits. Where there is a sufficient area of land the pavilion system, which possesses unquestionable advantages, will appear to be most eligible. But with a site that is circumscribed, and is more or less of a square, there is no reason why it should be despised because it will not allow the introduction of a long series of arcades.

That view would be taken by the majority of architects. It was also adopted by four of the referees, viz. Lord Lister, Sir Thomas Smith, Professor McEwen and Sir William Mac Cormac, who declared that the pavilion was ideally the best method of construction, but considered it quite possible to build a satisfactory infirmary without adopting the pavilion arrangement. In other words, they are of opinion that circumstances should be considered and particular cases be treated according to their peculiarities. Two specialists, Dr. Allbutt and Professor Annandale, believed the pavilion form of construction was essentially the best. On the other hand, there were two who were no less decided against the value of the pavilion system. Mr. Howard Marsh said it was not essential, but in some respects inconvenient and open to positive objection. Mr. Holmes declared himself to be an opponent to the pavilion system, and had come to the conclusion that there were other methods of hospital construction more satisfactory; for example, the "H" plan, or blocks arranged as radiating from a central administrative building. Dr. Goodhart, Mr. Treves and Sir S. Wilkes declined to give the committee the benefit of their opinion on the subject. Excluding them, we have the judgment of nine experts. Two loyally confine themselves to the advocacy of the pavilion system for general adoption. Four consider there need be no objection to its use in some cases, while two are emphatically its opponents. The committee, therefore, are justified in saying that six authorities are confident that a modern hospital, up-to-date in every particular, could be constructed on a plan other than the pavilion.

That doctors differ is a very ancient experience of mankind. They seem to be especially liable to the failing when they have to deal with problems in building construction, and in most cases they display temerity in attempting to meddle with them. In the case of the infirmary, when we find nearly one-half the judges take a broad view and decline to be the advocates of one method, or its opponents, which is equivalent to being the advocates of another method, we consider the result to be satisfactory. Architects know the extent of their responsibility when they are entrusted with the designing of hospitals, and they would make sacrifices if by so doing they were able to diminish human suffering. On that account they have deferred to the opinions of physicians and surgeons, although their own conclusions and experience would dictate another course. After what has occurred in Manchester, they must realise that medical men of the widest experience and knowledge cannot agree about the merits of a plan. The effects of the revelation will not be confined to Manchester or to Great Britain.

The committee and board of management are satisfied with the result. In spite of the difference between the opinions, they consider it is unnecessary to seek more information from a new set of advisers. The chairman of the medical board says :—"It is the first time that such an inquiry has been carried out. Hitherto it has been thought that medical opinion was wholly in favour of the pavilion plan exclusively. We have found that that is a complete mistake. The consequence of this is that in future hospital authorities will be less fettered and will give effect to their wishes at lessened cost." As a consequence of the investigation the board of management are authorised to take steps to obtain suitable plans and estimates, and to incur all necessary expenses in connection therewith.

WAR AND BUILDINGS.

As the war in South Africa may be said to be at an end, traders and others who have foresight are arranging for the materials for reparation of buildings which will be earliest in request. Among them paints are prominent. We are told in one of the Cape journals that owing to the disturbances many of the towns have been allowed to lose much of their pristine whiteness, for "the happy institution of six-weekly recoatings of domestic exteriors has temporarily lapsed, and when again peace and good order are restored throughout the country the offices of the painter will be much in request." Bridges and other structures will also want to be brightened and preserved with paint. We are then informed that "white and stone-coloured paints always form the bulk of South African consignments; they are the colours generally used, but gayer colours have their purchasers."

There could not be found a more exact commentary on the British system of making war than the commercial intelligence to which we have referred. Thousands of our soldiers have been killed or disabled for life, and millions of money have been spent in overcoming the Boers. Although it is natural to seek for retribution, the only evidence of British anger which is to be seen in the greater part of the South African provinces which have been traversed is the dulness of the paint. The visitor finds it difficult to perceive the immaculate whiteness which he expects in a Dutch town, but he knows that the painter or the amateur will only need to lay on an additional coating and the buildings will assume their old appearance.

That war could be carried on for nearly a year without doing more injury to buildings would appear to have been an impossibility in the grand old days when soldiers did not possess the destructive machines which are now at their service, and which no civil building can resist. A pride was taken in the demolition of buildings. Need it be said how abundant is the evidence in the Bible of the spirit which in early ages animated men? "He burnt Hazor with fire" sums up the manner of dealing with places that were conquered. That not one stone of their enemies' houses should be left standing on another, and that great cities should be changed into desolate plains with dragons for inhabitants, were the visions which cheered Israelites when they thought of a day of triumph in battle. Innocent and guilty were to be confounded, for mercy was unknown, and "the pleasant houses" were to be destroyed along with the walls and towers. "Delenda est Carthago" expressed the spirit which animated the statesmen as well as the warriors of Greece and Rome. Greek cities were repeatedly destroyed in the course of internecine contests. Athens was exposed to a fate of that kind almost from mythical times, and it was by one of the contingencies of war the Parthenon was ruined in 1687. Many of the great buildings which have been classed among the marvels of architecture owe their existence to the necessities which followed a war. Indeed, it is supposed that Pericles expended money on temples and public buildings which had been collected to repair the ruin in other cities of the Federation as well as Athens. Syracuse, Agrigentum and Corinth testify to the Roman belief in the necessity of a revenge which was marked by the annihilation of building works. That a change of manners in the latter days of the Republic had taken place is evident when we find Cæsar on two occasions sparing Massilia. But in the dark period which marked the decline of Roman power, and the incoming of enemies of various races from many climes, the self-controlling power of the mighty Julius was no longer to be witnessed.

It would be a melancholy task to narrate the destruction which fell upon buildings all over Europe during many centuries. It cannot be said that English troops when they invaded France displayed at first any more reverence for the builder's art than older warriors. But in the fourteenth century, if not earlier, injury to property was not permitted. Henry V. looked on the French as his subjects, and his army regulations testify that the king wished no records of ill-conduct in the form of ruins should stain his military proceedings. His conduct of the war is finely discriminated by Shakespeare. Falstaff's men dare not undertake any but the meanest larcenies. As the pert Boy who accompanied them said :—"Bardolph stole a lute-case, bore it twelve leagues, and sold it for three halfpence. Nym and Bardolph are sworn brothers in filching, and in Calais they stole a fire-shovel." Soon afterwards Bardolph met with his desserts, for by order of Lord Exeter his vital thread was cut "with edge of penny cord" for stealing a pyx of little price. In the poetic description of the state of France after the war we see the effects of neglect by the natives, corresponding with what is now observed in the Transvaal :—

> All her husbandry doth lie on heaps,
> Corrupting in its own fertility.
> Her vine, the merry cheerer of the heart,
> Unpruned dies; her hedges even-pleached,
> Like prisoners wildly overgrown with hair,
> Put forth disorder'd twigs; her fallow leas
> The darnel, hemlock and rank fumitory
> Doth root upon, while that the coulter rusts
> That should deracinate such savagery;
> The even mead, that erst brought sweetly forth
> The freckled cowslip, burnet and green clover,
> Wanting the scythe, all uncorrected, rank,
> Conceives by idleness and nothing teems
> But hateful docks, rough thistles, kecksies, burs,
> Losing both beauty and utility.

In these words, which, although written by a dramatist, are historically true, we have a companion picture to the lapse of six-weekly recoatings of domestic exteriors in South Africa. The devastation in both cases was caused by the neglect of the occupants and not by the British invaders. In 1420, as in 1900, we can see the same desire to limit the horrors of war. There might be other armies who would be equally guarded in avoiding unnecessary injury to property if they were contesting with stubborn Boers, but in the fifteenth century the English system was unique. The orders of no other army could in those days present any parallel to those prohibiting foraging or interference with labourers or the destruction of vineyards, as in the following injunction :—"That no maner of man bete downe howsing to borne [turn houses into firewood], ne non apletres, peretres, nottres, ne no other tres bering frute, nor that no man put no best [beast] into vynes, nor drawe up the stakes of same vynes." In the great wars under Marlborough the true English spirit was again omnipotent. Terrible operations had to be gone through, but the suffering was restricted as far as possible. His soldiers were said to be "tractable, civil, sensible and clean, with an air of being above the vulgar." If contrasted with what was perpetrated by orders of Turenne in Germany and Savoy, the English principle will be more manifest. The Frenchman's weapons included torches as well as muskets and swords. As in an earlier time, their aim was to mark progress by "feu, flamme, fumée et toute calamité." The Palatinate presented to the spectator's view countless ruins, including the picturesque palace of Heidelberg. If some of the Romanesque churches in the Rhine districts have survived to our time it was owing to the thickness of the walls and strength of the stone. A pavilion taken from Hanover was admired in Paris to the end of the eighteenth century; it was a trophy of war, like the pictures and statues of the great masters of Italy and Holland which adorned the Louvre. Indeed, Napoleon's marshals seized plate and valuables to enrich themselves with as little compunction as if they were mercenary soldiers.

The old love of destruction was most evident in besieging towns. Wellington represented the good sense of his countrymen when he said such operations were of little avail, for while peaceful inhabitants and their property were annihilated, the garrison suffered trivial injury, and in his own operations he directed that the firing should be concentrated on the fortifications alone. Frederick the Great ruthlessly destroyed beautiful buildings at Dresden and Prague. At the time of the Revolutionary War the town of Lille was made to suffer from shells during a whole week, although the Archduke Albert was aware that not one of his guns could damage the casemates; the injury he inflicted was wanton and solely inspired by a desire for retaliation. In the American War of 1812 it must be owned that Admiral Cochrane caused destruction in Washington in a manner which recalled antiquity. President Madison, in describing what was done, was justified in saying, "The enemy has avowed his purpose of trampling on all the usages of civilised warfare, and given earnest of it in the plunder and wanton destruction of private property. His barbarous policy has not even spared those monuments of the arts and models of taste with which our country has embellished our infant metropolis." Among the buildings were the Capitol and the Presidential residence. Cochrane's explanation was that the British troops were fired on from the Capitol and adjoining houses, which were therefore burnt. It was an unfortunate triumph, and for a long time biassed the Americans against England. Fortunately, we live in more civilised times, for the havoc perpetrated in Washington contrasts strangely with what has been done in South Africa, where, in spite of many annoying acts for which a stern punishment could well be inflicted, white paint will rectify most of the injuries sustained by buildings during the war.

MORE ABOUT ARCHITECTURAL TRIUMPHS.*

At the present time M. Julian Guadet is probably the best abused man in all Paris. As architect in charge of the old house, he was entrusted with the commission for the rebuilding of the Théâtre Français, and he has failed to realise the wishes of the majority of Parisians, who are without any knowledge of construction. It was held to be appropriate that the new house should be opened gratuitously at noon on the national fête day, and as M. Guadet is not accustomed to the erection of houses of cards or Japanese tea-rooms, he disappointed the public, and therefore he has committed an offence which will not be easily condoned. But as abuse can confer distinction in Paris, the editors of the *Figaro* were eager to obtain his views also about the architectural conquests of the century.

M. Guadet was ready to admit that if the nineteenth century was not remarkable for its conquests, it produced so many schools chaos might appear to have come again. But he consoled himself with the belief that architects are not the creators of architecture, which owes its character rather to the social conditions of the time and the ideas which, like germs, are floating around us. Jean Jacques Rousseau has had the credit of serving as a pioneer of the Revolution by his impassioned writings. But a man who loved a state of nature could not care much for any dwellings except caves and shady bowers. M. Guadet, however, believes that he helped to create the pseudo-Roman style, and the fashionable church of Saint-Phillippe du Roule, the ancient barriers of Paris, and the Rotunda in the Jardin des Plantes testify to his inspiration. Then came Chateaubriand, who loved papal Rome and who was instrumental in introducing Gothic, of which there was not one example among the churches of that city. The multiplicity of literary leaders destroyed all unity in architecture; it was a case of "chacun pour soi, comme il peut sinon comme il veut." It was impossible under the circumstances to have creative art. French folks considered it was as easy to have buildings as pieces of furniture in the style of the twelfth, thirteenth or fourteenth century. Unlike the people of a past time, who wished to have art as modern as themselves, there was no demand for work in the style of the nineteenth century.

The innovation was noticeable. As late as the eighteenth century France was able to express itself in charming works, which displayed finesse, measure and other national characteristics. But before the century closed there was a pseudo-Roman style which bore as much relation to the antique work as the numerous melodramatic characters called Brutus or Spartacus to the men of Rome. Percier was the corypheus of the style, and his best work is the Arc de l'Etoile, but the Gothic reaction can only point to restorations which are often doubtful.

Then came a revolt, in which Hugot, Labrouste, Duc, Duban, Dufeux and Ballu were leaders, and at a later time Garnier, André, Ginain and others more or less ignored. With them architecture signified evolution and not retrogression, for they did not copy ancient works however excellent with fidelity. After an eclipse or catalepsy of forty years there came a Renaissance exemplified by such works in Paris as the Ecole des Beaux-Arts, the Palais de Justice, the Bibliothèques Sainte-Geneviève and Nationale, the Hôtel de Ville, &c., with the Opera House as its most characteristic expression. The style may be less elegant than its predecessor of the eighteenth century, but it is more utilitarian, more subjective to programmes and more ingenious in solutions. And such programmes! Formerly an architect might do as he pleased, but now he has to attend to drainage, lighting, heating, ventilation, with as many et ceteras as may be desired. In the first place buildings have to be useful and appropriate, and not till then is there a chance for art, or rather it arises from the appropriateness. The requirements in houses especially are countless. In a house of six storeys everything is novel if compared with those of an earlier time, and in the fifteen-storey building there will be different conditions. Not long since the staircases were open to all winds, as well as vestibules and corridors. It is now otherwise. The change has its advantages, but under such conditions who can think of creating anything which will resemble the staircase of the Château du Blois?

Then there are sanitary considerations, which nowadays are carried to luxury and even to exaggeration. But what can they avail when 2,000 francs per mètre has to be paid for sites? The result is that rooms are too low, too numerous, too sombre; the staircases are like wells, the sun is an unknown visitor, and the air is parched. Art is compromised by the arrangements for the "confortable," and has to be sacrificed to material commodities. True architects endeavour to make the best of things by discovering in the indispensable necessities an artistic element. It is perhaps from those attempts that the art of the future will arise. What is certain, moreover, is that modern architecture has become terribly complicated. The architect should be now an encyclopædist, and to enable him to deal with gas, water, electricity, heating, telephones, lifts, he will require training as a mechanical engineer. The concierge will no longer suffice. Later on it may be necessary to consider the machinery in the first place, and a graduate of the Ecole Polytechnique will supplant the architect. M. Guadet admitted that industrial organisations and the use of iron and steel on a grand scale have enabled immense works to be executed, but the very power and means available lead easily to exaggeration. Much which used to give character to architecture is being abolished under the new conditions. Materials are brought from remote regions; north and south exchange their building stone. There is consequently uniformity of appearances, and a variety of schools or local styles are becoming less and less possible. But what can be done? There is an irresistible march which cannot be arrested. Whatever may be the value of the architecture, it is adequate to the times. In conclusion, M. Guadet considered that Frenchmen had still reason to be proud of their school, to which strangers from many parts came to be taught art, and the success of the students in foreign competitions, as in Rome, Trieste, Cairo and San Francisco, was remarkable.

M. Guadet's explanations might be taken in support of his theory of the modern lack of originality. His ideas resemble those by other judges, although expressed in different language. It is also easy to read between the lines, and discover a defence of his own work at the Théâtre Français. The new building will have appliances and machinery which were unknown in the days of Louis, who erected the original theatre. It should not be expected that so elaborate a building was to be completed in as short a time as its predecessor. The conditions under which architects now work are altogether different from those in any preceding age, and it is inevitable that the result of their labours must be unlike the works of men who were able to design in a simpler, if not in a happier, age.

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* See page 194, September 28.

It is to be regretted that M. VAUDREMER declined to express his views on modern architecture at any length in the *Figaro*. He agreed that we were living in a time of evolution; that everybody seemed to be seeking and discussing. Some sought the solution of modern problems among the traditions of a former age, others pretended they were independent of the past. Examples were to be found showing the power of rationalism, of caprice, and of archæology. For a time the style of the Regency is in vogue, but a reaction will come which will lead to other periods. But whatever be the influence, M. VAUDREMER is as assured as others of the incontestable superiority of the French school.

The conclusion to be drawn from all that is said is that modern architecture is more and more departing from the principles which made it the equal, if not the superior, of all other branches of fine art. A Greek painter or sculptor would find little difficulty in accommodating himself to the conditions of his art in modern times. He might feel the inconvenience of the want of public satisfaction with his work, and there would be other social shortcomings, but he would employ marble and colours as in the old days. The architect now has to be a many-sided man in a sense which was not understood by the Germans when they invented the word, and much of his time has to be engrossed by subjects which by no elasticity of language can be described as art. Whether it would be better to resign those classes of work to associates having a training resembling that of the students of the French Ecole Polytechnique need not now be discussed. But so long as organising ability is the first requirement of an architect it is difficult to attain that power of concentration on form alone which was one of the characteristics of the ancient representatives of the art.

COBHAM.[*]

THE individual who is desirous of writing an article on any one of the historic places in England is always confronted by a number of difficulties. In the first place he must draw his information from many well-known sources, avoiding as far as may be possible "the too well-beaten track." Prominence must be given to all important historical facts, and no really interesting features may be omitted. He has then to draw slightly upon his imagination for the cement necessary to piece all together in good style, and then he must use his colouring material with all the artistic skill with which nature has endowed him; or, what is practically the same thing, with that talent he flatters himself he possesses.

The sources from which this short article on Cobham are collected are numerous and fairly well known. We begin by giving the authorised derivation of the name Cobham.

Isaac Taylor says that the suffix "Ham," which is very frequent in English names, appears in two forms in Anglo-Saxon documents. In the one instance Ham signifies an enclosure, that which hems in; a meaning not very different from that of Ton or Worth. These words express the feeling of reverence for private rights. But Ham involves a notion more mystical, more holy. It expresses the sanctity of the family bond. It is "The Home," the one secret and sacred place. The word, as well as the feeling of which it is the symbol, was brought across the ocean by the Teutonic colonists, and it is the sign of the most precious of all the gifts for which we thank them.

"Cob" is a Saxon word, meaning "a hill." The ancient name of Cobham was "Cope Ham," signifying the "Home on the Hill."

The village of Cobham is situated in a charming spot and possesses several objects of great interest, more particularly the Old World architecture in the main street.

One of the most interesting places in the village is the Old Leather Bottle inn, so named after the famous old leather bottle which was dug up by a labourer in a field, and which contained a number of Roman coins. It was much beloved by Mr. Pickwick, whose likeness is vividly painted on the signboard, in that picturesque attitude now so familiar to us all; and every admirer of this hero, immortalised by Dickens, feels that he must enter and do homage to him in the comfortable old parlour.

The Cobham family took its name from the village, and first comes into notice in the twelfth century, when Serlo de Cobham possessed property in this parish; and his son Henry purchased the manor of Cobham, and was one of the Crusaders present at the siege of Acre in 1191.

Very little is known of the next heir who was keeper of Rochester Castle, but his son John took an active part in the great struggle between Henry III. and the Barons. He was present at the siege of Rochester in 1264 under Simon de Montfort, and it shows us how much he was esteemed by his Sovereign when we find that on the day of his burial in Cobham Church a solemn mass was said in the chapel at Westminster for the repose of his soul, Edward, the king's son, being present. He died in 1300, aged seventy-one years.

About the year 1362 Sir John de Cobham appears upon the scene. He was frequently engaged in the continental wars under the Black Prince, and he took a leading part in the defence of the county of Kent against the expected invasion of the French, who had previously landed and burned many of our towns. He founded Cobham College, repaired the church with sumptuous adornments, and shared with Sir Robert Knowles in the building of Rochester Bridge. He constructed Cowling Castle for the defence of the country, and the inscription which he put up over the main entrance remains perfectly legible to-day, and reads as follows:—

> Knoweth that beth and shall be
> That I am made in help of the contre.
> In knowledge of which thinge
> This is chartre and witnessing.

After a life spent amid the vicissitudes of State, in 1393 he fled to the monastery of the Carthusians in London and renounced the world. That did not protect him, for he was drawn from his seclusion and committed to the Tower. After trial he was adjudged guilty, and condemned to be hanged, drawn and quartered. This sentence was afterwards commuted to banishment for life to Jersey. He did not long remain in exile, and died in 1407, aged about ninety-two.

In 1564 Lord Henry de Cobham was born, and he seemed to be fortune's favourite. Honours fell rapidly upon him. He was Lord Warden of the Cinque Ports, Knight of the Garter, and was in high personal favour with the Sovereign. In 1599 he entertained Queen Elizabeth at his residence in the Blackfriars. On the death of the queen in 1603 James of Scotland ascended the throne, and plots arose against him. Lord Cobham was condemned to death and his estates were forfeited to the Crown, but his sentence was commuted to imprisonment for life. He lay in the Tower for fifteen years; hope died within him, and he became lost to the outer world. Of the living man we hear no more, and he is said to have died in 1619. Where his body found its resting-place is not known, but it lay some time awaiting the last of human charities for want of money to pay the burial fees. Thus the great feudal barony passed away like a dream, and the male line becoming extinct, Sir Reginald Braybrooke married Joan, "the Lady of Cobham," grand-daughter of Sir John, the founder.

Having now briefly noticed the most eminent characters of this ancient and noble family, we will take a rapid view of the hall, gardens and park.

Cobham Hall is approached from the village by a noble avenue of four rows of splendid limes, 1,100 yards long. It is a red-brick mansion, consisting of two Tudor wings, connected by a centre block, which was designed by Inigo Jones and built by the Earl of Essex in the reign of James I. The wings are of the Elizabethan order, and were the work of Sir William Brooke, Lord Cobham, during the years 1582 to 1594.

It will be observed that the two very distinct styles do not harmonise. The wings preserve the characteristics of the later Tudor style—projecting mullioned windows, octagonal turrets, quaintly carved cornices and ornamental doorways, whilst the front, by Inigo Jones, is a plain façade with Corinthian pilasters. The rich tones of the red brick, contrasted with the various tinted foliage surrounding the house, offer the finest studies of colour. No class of buildings is half so suggestive of English domestic comfort as these brick structures of Elizabeth's time.

The Tudor gateway approaching the house is well worth particular notice.

Cobham Hall was the principal residence of the Cobham family before the first year of King John's reign, 1198. They were great lords of all this district, frequently sheriffs of Kent and constables of Rochester Castle until the death of Sir John de Cobham at the end of the fourteenth century. He left as heiress of all his honours an only grand-daughter, Joan de la Pole. This lady disposed of five husbands, one of whom was the famous Sir John Oldcastle, who assumed the title of Lord Cobham in right of his wife.

Sir John, having joined the Lollards, was excommunicated by the Archbishop of Canterbury and imprisoned in the Tower. He made escape, however, and for four years succeeded in eluding his pursuers. He was then recaptured, tried and condemned for heresy, and on December 25, 1417, was drawn through the City of London on a hurdle and hanged at the gate of St. Giles's Hospital, his body being burned whilst hanging.

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[*] A paper read by Mr. H. Virgoe at the meeting of the members of the Upper Norwood Athenæum on September 22.

Joan de la Pole, by her second husband, left an only daughter, Joan, who became heiress in her turn and married Sir Thomas Brooke, of Somersetshire, by whom she had a family of ten sons, and the estates of Cobham continued in the house of Brooke until the attainder of Henry Lord Cobham, in the first year of the reign of James I., when the whole of the confiscated estates were granted by the Crown to Lodowick Stewart, duke of Lennox. Through his descendant—Lady Catherine O'Brien—they passed to Lord Clifton and Cornbury, and on his death, in 1713, to his heiress, Lady Theodosia Hyde, whose husband, John Bligh, Esq., was created Earl of Darnley in 1725. His representatives have continued lords of Cobham.

During one of her progresses Her Majesty Queen Elizabeth stayed for some time at Cobham Hall.

Charles I. and Henrietta Maria, after their marriage at Canterbury, slept here on their way to London, and on their journey the royal pair found all the highways strewed with roses and every kind of sweet flowers. There was no sign then of the evil days in store when the troopers of Colonel Sands pillaged the hall and sent off five waggons loaded with the spoil to London in the year 1643.

The interior of the mansion contains several objects of remarkable interest. The gilt hall or music-room is ornamented by decorations of the time of Louis XIV., and there is the splendid chimney-piece sculptured by the father of the late Sir Richard Westmacott, after Guido's "Aurora." George IV. called this the finest room in England.

The great dining-room is celebrated for its magnificent panelled walls and ceiling. The picture gallery contains a superb collection of pictures from the schools of Florence, Rome, Bologna, Naples, Netherlands, France, Spain, England. The Orleans gallery and the Vetturi gallery from Venice are the great glory of Cobham.

In the portrait gallery can be seen two portraits of Queen Elizabeth—one painted in her younger days, the other when she had reached a more mature age. The gallery also contains an immense number of portraits of noble men and women. As a poet says the room is :—

> Girt with many a baron bold ;
> Sublime their starry fronts they rear,
> And gorgeous dames and statesmen old
> In bearded majesty appear.

In the entrance-hall there is a large antique bath of red Oriental granite, which is of great interest ; it is now used as a rug stand.

The gardens of Cobham Hall are very remarkable for the beautiful lawns, parterres and fruit walls—these are sheltered by ancient sweeping cedar-trees, old English oaks and laurels —and in the season may truthfully be described as "a thing of beauty."

The park is seven miles round, and is glorious, and contains exquisitely varied woodland scenery with abounding herds of graceful deer and beautiful green undulations, particularly at the spot where the chestnut tree called "The Four Sisters" is placed. The tree is 32 feet in circumference and has four trunks from one stub.

The view from the mausoleum or Williams Hill is most charming. This mausoleum has never been used ; it was erected in 1783 at a cost of 9,000*l*.

Charles Dickens took his last walk in this park on June 7, 1870—it was his favourite haunt.

Cobham Church.

We are now in the church of Cobham, dedicated to St. Mary Magdalene. It possesses considerable interest for the antiquary, not only on account of its associations, but chiefly for its brasses. The oldest portion of the structure is the chancel of Early English style, belonging to the first part of the thirteenth century. It appears to have fallen into decay, for on March 19, 1326, a meeting was held in the chancel by the Bishop of Rochester, Sir John de Cobham, knight, and other parishioners being present, at which the bishop enjoined on the Prior of Lewisham, who had the chancel to his use, to put it into a fit state of repair, as well as the books and vestments, before the feast of Easter next ensuing, under penalties, &c. The entrance porch is most picturesque, as well as the stalls belonging to the seven priests of the old chantry. There are a few ruins of the chantry, consisting of a fragment of the north cloister wall and refectory, still to be seen near the church.

In the church, on the south side, are three sedilias and a piscina of great beauty of design, which belong to the second half of the fourteenth century. Close behind are the remains of a staircase.

When the edifice was restored in 1860 this was opened and numerous fragments discovered, consisting of female saints, &c., which had formed portions of a screen of tabernacle work of a highly ornate character, which stood across the chancel a little in advance of the eastern wall.

The ancient altar slab with five crosses incised upon it, emblematic of the five wounds of Christ, still remains at the south-east corner of the chancel, and beneath it in 1860 was found an earthen pot containing bones, probably sacred relics.

The arch which connects the nave with the chancel was constructed in 1860 to supersede an older one which was much smaller.

Cobham Church is distinguished above all others as possessing the finest and most complete series of brasses in the kingdom ; it contains some of the earliest and some of the latest, as well as some of the most beautiful in design. There is also interest in the fact that these memorials for the most part relate to a family who for centuries took an active part in public affairs, and whose final extinction in the seventeenth century is a remarkable illustration of the unstability of worldly grandeur. There are twenty-four brasses of the fourteenth, fifteenth and sixteenth centuries in the church—thirteen to the Cobham and Brooke families and eleven to the masters of the college.

We will take them in the order in which they lie. The first commemorates Joan, first wife of Sir John de Cobham, 1320. This brass agrees in character with the earliest known in England, and is the only one of this description which has been preserved. The inscription grants forty days' indulgence to all who pray for her soul.

The next brass is that of Sir Thomas de Cobham. By his will, made on the day of his death, December 20, 1367, he desires his body to be buried in the church of St. Mary Magdalene, at Cobham, and bequeaths 100 shillings to the master and chaplain of the college ; a dun coloured horse to his nephew, John Lord Cobham ; a chestnut horse to his brother Reginald (a priest), a gown with a furred border to Robert Roos, and a long cloak of various colours to John Pyrk, and the remainder of his goods were to be divided among the poor.

The next brass is that of Sir John de Cobham, the founder, third baron, the last male of his line, and the most interesting and most considerable person amongst the Cobham barons. This brass was executed about forty years before his death.

Next is the brass of his wife Margaret, who lies at his side. She died in 1395.

Next is the brass of Maude, the wife of Sir Thomas de Cobham, who died in 1380.

Next is the brass of Margaret de Cobham, of the year of 1375.

Next is the brass of Lord John de Cobham, grandson of John ; he died in 1354. It belongs to a series of which very few are now extant. The hand of the artist is strongly defined, and it is said only two others similar are known. The armour is one of transition, where the interlaced mail was overlaid with plate. The inscription asks passers-by to pray for the soul of John de Cobham (the courteous host), who passed away on the morrow of St. Matthew, 1354.

Next is Ralph de Cobham, 1402. This is a small brass, bearing the demi-figure of a knight.

Next is Sir Thomas Brooke, Lord Cobham. This is the last monumental brass of that kind to a member of this family, and consists of two figures, a knight and his lady. He died in 1529. As he had three wives, and here is shown but one, it may be asked which is intended. This is determined by the children, as shown beneath, and as only his first wife had issue, it must be to the memory of Dorothy.

Next is the brass of Sir Reginald Braybrooke ; it is of beautiful design—at the knight's feet are his two sons. He died in 1405.

Lying next to it is the brass of Lady Joan, who after having had five husbands died in 1433. She was the grand-daughter of Sir John, the founder. The Purbeck marble in which this brass is set is still in its original state ; all the others have been refaced with mastic. Her six sons and four daughters are represented, as well as the familiar little pet dog.

Next is the brass of Sir Nicholas Hawberk, who was the third husband of Lady Joan. This may be considered about the first of the English military brasses of the time, 1407.

Next is the brass of Sir John Brooke, 1511, and Margaret his wife, 1506. The figure of Sir John is gone, but it existed in 1597 ; at their feet are their eight sons and ten daughters.

In the north aisle there is a brass to the memory of Reginald de Cobham, 1402 (the priest), son of Henry, the first baron. It represents a priest in a cope and surplice beneath a canopy, but it cannot now be seen as it is under the new organ.

Immediately in front of the Communion table is the magnificent altar tomb of Sir George Brooke, Lord Cobham

Governor of Calais, 1558, and his wife the Lady Anne, 1558. It is of alabaster and is of rare beauty; the slab is of black marble, and upon it lie the carved and emblazoned effigies of himself and his wife.

It is partly sustained by sixteen fluted Ionic columns; kneeling figures of fourteen children, with their names above them, are ranged round the sides; escutcheons of arms are a each end. Lord Cobham is represented in armour, surmounted by a tabard emblazoned with his arms; over this he wears the mantle with collar and hood of the Order of the Garter, and the Garter is on his right knee; at his feet is the heraldic antelope. The figure of the Lady Anne wears over the gown a tabard of her arms, her head rests on a cushion similar to that beneath her husband's, and she wears the French hood, the forerunner of the modern bonnet; at her feet is a lion couchant winged. On a semicircular projection at the west end lies a helmet with the ancient crest of the Cobham family—a Saracen's head.

The best of the brasses to the memory of the masters of the college are those of William Tanner, first master, 1418, and John Sprottle, 1498. There are two fine specimens of tilting helmets suspended on the south-east side. Probably they belonged to Sir Reginald Braybrooke and Sir Nicholas Hawberk. On the north wall of the chancel hangs a fine specimen of the helmet of this period, doubtless that of Sir Thomas Brooke.

The new college, which was built by Lord Cobham in the reign of Elizabeth, adjoins the church, and has apartments for twenty pensioners, and a fine old hall. Over the gate, towards the garden, are the founder's arms with an inscription. These old buildings and their ivied archways, dilapidated gables and deep shadowed interiors, form a good day's work for a sketcher's pencil.

THE NEW MUSEUM AT MUNICH.

THE Prince-Regent of Bavaria has opened the new National Museum, to which has been transferred the important collection of Bavarian antiquities till now imperfectly housed in the building in the Maximilienstrasse. That building, founded by King Max II., and adorned with the pretentious motto "Meinem Volk zu Ehr und Vorbild," writes a correspondent of the *Times*, has long been found inadequate, and, moved by the scientific spirit which has so powerfully affected all German educational institutions of late years, the Government has now completed a building which is sure to have a wide influence upon the construction of future museums all over the world. It is of especial interest to us in England, because we ourselves are at last making provision for the safe keeping of our treasures at South Kensington. The problem of arrangement is more complicated with us than it is in Munich, for the contents of the Victoria and Albert Museum come from every country, while those at Munich are almost exclusively South German; but, none the less, the novel method of arrangement adopted in the new German building is well worthy of study on the part of those who will be responsible for the proper display of our South Kensington possessions. The architect is Herr Gabriel Seidl, who built the important Annakirche in the town; but the systematic conception of the arrangement, as well as the details of it, has been the work of Professor Rudolf Seitz, in conjunction with Dr. Graf, the director of the museum. It is interesting to learn that the total cost of the building amounts to about 4,000,000 marks, or 200,000*l.*; no great sum for a very solid building of two floors, containing no fewer than 100 rooms. The style is the pleasant nondescript which one finds in so many German buildings of the sixteenth century, where Mediæval high-pitched roofs and round turrets come into quaint juxtaposition with doors and windows suggested by Italy. The fine and isolated position is in the new part of the town adjoining the Englischer Garten, not far from the Eastern Railway station.

I have said that there are no fewer than 100 rooms, which implies that the objects are shown in comparatively small detachments. The leading principle is that the rooms on the ground floor should show, in strict chronological order, Bavarian life at different epochs, from the little circular room which, in its architecture and in its contents, recalls the tenth and earlier centuries, down to the blue and gold magnificence of the late King Louis. In the early rooms the sense of architectural evolution is greatly helped by the fact that the various castles of the Bavarian Crown have contributed ceilings, windows, &c.; and in many cases the rooms have been planned specially to receive these. One ceiling, from the Castle of Dachau, is of particular splendour and beauty; but several of the earlier ones, though less elaborate, are even more interesting from the historical point of view. If the museum is less rich than the Louvre or South Kensington in objects of the highest artistic importance, it contains an almost endless number of specimens, large and small, of the domestic art of the country in all ages; of wardrobes, caskets, iron utensils, beds, tables and chairs the supply seems inexhaustible, and nearly all are in their original state. The ironwork, the ivories and the tapestries, the product of many successive centuries, are specially abundant, and many of the examples are extremely fine, though, of course, only a small proportion of the tapestries are of Bavarian manufacture. Perhaps one obtains the best idea of the metalwork when one passes to the upper floor, where the rooms are arranged on a different principle. Downstairs each room contains the varied productions of an epoch; upstairs, each contains a special class of objects—woodcarvings, arms or textiles—carried through several epochs. The large room given up to wrought-ironwork is one of the best examples. In this art Bavaria has always been distinguished, and is so to-day; and such a specimen as the screen from a church in Regensburg is quite worthy of comparison with the famous gates in South Kensington. In the department of armour and arms the swords of the fifteenth and sixteenth centuries are not less fine, and much more numerous, than those in the Wallace Collection.

Half the objects here are, of course, of a much later period, and are of the *rococo* taste which affected all Europe, and especially the German Courts, in the seventeenth and eighteenth centuries. The Boulle monument to the famous Elector Max Emmanuel—to whom Bavaria owes most of the best Flemish pictures in the Old Pinacothek—is very nearly as fine as the best French work of the kind. Equally precious, especially in the disparaging sense of the word, is much of the carved ivory work of the same period; but it must be owned that nearly all of it is a sad example of wasted labour. However, an historical museum must not neglect any period, even though one may not agree with its standards of taste. The Bavarian Museum neglects nothing, and is in consequence one of the most complete of its kind to be found in Europe.

EAST RIDING ANTIQUARIAN SOCIETY.

THE annual meeting of the East Riding Antiquarian Society took place on Monday last at Howden. There were present Lord Hawkesbury (the president), Colonel Haworth-Booth, Mr. J. R. Mortimer, Colonel Bertie Hobart (of Grimston Garth), Canon Maddock, Mr. Bohn, C.E., the Rev. A. N. Cooper (secretary) and many others. The choir of the famous church of Howden has undergone further ravages, and a portion of the windows in the chapter-house has lately fallen, and one of the first acts of the Society was to pass a resolution, moved by Lord Hawkesbury, approving of the effort to be made to prevent further decay. The members were received by the Rev. W. Hutchinson, who gave an outline of the history of the church, which was built towards the close of the thirteenth century by a Bishop of Durham, who had his palace close by. Edward II. stayed three days at Howden with the Bishop, and dated an important letter therefrom, which is still extant. The great benefactor was Bishop Skirlaugh, a sievemaker's son, of Holderness, who is commemorated in a local rhyme:—

> Bishop Skirlaugh was good to the people;
> He built them a school, and heightened the steeple.

The arms of this bishop, who died in 1406, are three willows crossed, showing he was not ashamed of his origin, and these may be seen in several parts of the palace, showing no science is more true than that of heraldry, as it ought to be.

In the evening the annual dinner was held at the Wellington Hotel, Lord Hawkesbury presiding. Afterwards the annual business meeting was held. All the officers were re-elected. The treasurer's balance-sheet showed a balance in favour of the Society of 5*l.* 5*s*, and the secretary's report showed a membership of 172. Papers were read by Mr. J. R. Mortimer, on "Subsequent Excavations at Danes Graves," and by Mr. J. R. Boyle, F.S.A, on "Place Names."

On the next day the Society visited Hemingborough Church, Wressle Castle, Bubwith, and Skipwith, under the guidance of Mr. J. Bilson, F.S.A.

The Foundation-stone of the new church of All Saints, Eastworth, Chertsey, has been laid by Lord Midleton. The church is designed by Mr. J. H. Christian, and when completed will cost about 6,000*l.* and seat 500 people. The builders are Messrs Goddard & Son, Farnham.

Dr. T. Gilbart Smith, when presiding at the annual dinner of old students of the London Hospital on Monday, stated that the enlargements and the scientific improvements which had been made and were in contemplation in connection with the buildings, would place the hospital in the very forefront of philanthropic work. The various contracts would altogether involve an expenditure of nearly 200,000*l.*

NOTES AND COMMENTS.

Although the Machine Gallery in the Champ de Mars, which, like the Eifel Tower, is a survival of the Paris International Exhibition, 1888, has been recognised as the most important work in metallic construction undertaken by the French, its days are now numbered. From its immense area it cannot readily be utilised for shows or other purposes. An old exhibition building quickly becomes a melancholy object, and the immense hall is now considered to be no more than an encumbrance. M. Dutert will, therefore, have to exercise his fortitude, for the Galerie des Machines will have to be cleared away. It seems to be well fitted for a railway terminus of the St. Pancras type, but French railway engineers and managers are not convinced of the advantages of having colossal roofs of a single span or an undivided station.

Some years ago Dr. Alois Musil was sent by the Vienna Academy to pursue studies in ethnography and geography in Arabia Petra, and especially to collect inscriptions. He has lived with the tribes as if he belonged to them, and has traversed the country from Egypt to Nesched, and from the Dead Sea to Hedschas. In his last communication to the Academy he refers to his discovery of an Arabic castle. In it he was fortunate in finding on the walls over 250 representations of the life of the people in pre-Mahomedan days. The pictures are coloured, and, all things considered, in good condition. They depict scenes from the religious ceremonies in which the palm and the morning star were used as symbols, hunting scenes, figures of animals, and scenes representing the arts and crafts. The vaulting of one room was evidently painted to suggest the starry heavens. Dr. Musil says the name of the place is Er-Aradscham, which he identifies with Arakam and similar names. He has also found a great many inscriptions. Mention should be made of the remains of a basilica at Hesban, which he has described.

The annual convention of the Quebec Association of Architects was held in Montreal on September 3 and 4, under the presidency of Professor Capper. The annual report said that when ten years ago a few fellow-members undertook to unite the volitions and direct not only the studies, but also the future aims of the profession, in its own interest of course, but principally to give more security to the public, the idea was accepted by some with mistrust and by others with an open spirit of hostility. A body of serious and influential members of the community accused the architects of illegitimate ambitions and secret aspirations towards the formation of a new Order of Labour Knights in order to increase the already exorbitant fees which the powerful Association collects from that poor and honest class called speculators and jobbers. As adversaries of the idea were to be found among the very founders of the Association, it is not to be wondered at if the building public, always impressible and nervous when their interests are at stake, should have felt diffident. Nevertheless, such as it stands at the present time, the Quebec Association of Architects has received many adhesions to its project. In the absence of the rich traditions of honour and integrity which prevail among the European architects, the Association felt keenly the want of a code on professional ethics, and at the last annual meeting a commission was appointed which is now ready to make its report. It is to be hoped that all will unite to give force of law to a measure of such importance, which will complete and give more force and stability to the tariff of fees which has been distributed in the course of the present year. The Association has at present 123 members, of whom two passed the necessary examinations.

According to the *American Architect*, Professor Hyatt, of St. Louis, a weather observer, declares that the presence of high buildings perceptibly increases the average outdoor temperature of a city, and any one who receives of an afternoon the heat-rays reflected from the walls of one of these monsters, and finds the mercury still ascending, when he clearly remembers that under similar circumstances a few years before it used to fall agreeably, can easily believe it. The cause of the phenomenon lies in the act that these great masses of masonry become storehouses of heat, to be radiated upon suffering humanity in the night hours, which should be cool and refreshing. There can be no question about the physical facts, or that they are evil ones, and though for northern cities they may be disregarded, it really seems as if the citizens of Philadelphia, for instance, whose summer nights even now, with reasonably wide streets and low buildings, are nights of sweltering torture because of the dull and lifeless heat radiated from building and pavement, should feel urged by this fear alone to take steps to regulate the erection of high buildings, particularly in residential districts and upon narrow streets.

The session 1900-1901 of the Royal Academy of Art will open on Monday next with the course on chemistry by Mr. A. H. Church. The first lecture will be on "Grounds for Painting," to be followed by others on "Classification of Pigments," "New or Little-known Pigments," "Selected Palettes," "Vehicles and Varnishes," and "Conservation of Paintings and Drawings." Mr. Anderson's course on anatomy will begin on Monday, October 29, and will consist of six lectures. Six demonstrations will follow, and as usual can only be attended by gentlemen. The six lectures by Mr. Val C. Prinsep, as Professor of Painting, will begin on January 7 of the coming year; the subjects to be treated are not yet announced. The arrangements for the course of lectures on sculpture have not yet been made. The lectures on architecture by Professor Aitchison commence on January 28; the subjects will be announced in due course.

One of the effects of the new interest in technical education is seen in the demand for books on building which will enable students to pass examinations. The larger book on "Building Construction," by Mr. C. F. Mitchell, of the Polytechnic (B. T. Batsford), has reached a fifth edition. Not many years ago so much success would be considered incredible. But the book is well adapted to its purpose. It is written in a style which suggests a teacher of experience, and the very numerous illustrations may be taken as models for use in architects' and builders' offices. By introducing copies of examination papers the student is prepared for what he will have to encounter. Another excellent book has reached a seventh edition, viz. "Mathematical and Measuring Instruments," by Mr. W. F. Stanley (E. & F. N. Spon). Men who are old enough to recall their study of the first edition will find a pleasure in re-reading the seventh. The author's success has been as much owing to his enthusiasm as to his mechanical and inventive skill, and when a spirit of that kind inspires pages the book somehow has a perennial interest. There is nothing of the dry professor in the instructions, but they are none the less useful on that account. Many improvements in instruments are described, and aids are now available by which the draughtsman's work becomes almost too easy. The utility of the book is not confined to engineers and architects—many others can turn it to account. The "human scale," for example, which corresponds with the late Professor Marshall's proportions, would often save time and trouble to figure draughtsmen and painters.

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: VIEW FROM MINSTER ROOF.

THE TOWERS, PANGBOURNE, LOOKING NORTH-WEST. FROM THE WOOD.

No. 43 HIGH STREET, BROMLEY, KENT.

This building, re-erected to permit of the widening of the High Street at this point, replaces premises standing for perhaps more than 200 years. Innumerable difficulties were met with, not the least being the conflicting interests involved in the re-erection of the party walls created in days gone by, when neighbours were as one happy family, and Building Acts were unknown. Fine specimens of the old 2-inch bricks were met with in the old building. The existing premises, designed to meet the requirements of this rapidly-growing town, comprise business premises for the London and Provincial Meat Stores, with auction and show-rooms at back, and offices and studios on the floors above. Messrs. S. J. Jerrard & Sons, of Lewisham, were the general contractors, and Mr. Fred. W. Marks the architect.

STAINED GLASS IN ENGLAND SINCE THE GOTHIC REVIVAL.

WITH SOME ACCOUNT OF THE CHURCHES REFERRED TO.

By T. Francis Bumpus,

Author of "Ecclesiologia Germanica," "Summer Holidays among French Cathedrals," &c.

(Continued from page 188.)

The Works of Hardman.

THE works of Hardman executed during those two important decades of the Revival comprised between 1855 and 1875 are so numerous that were even a tithe of them to be described this history would be tediously prolonged. It is therefore possible to do little more than glance at a selection—and that a very small one—of the more interesting and important that have at various times come under the writer's notice, commencing with a specimen to be seen in a church of that congeries of town and suburb which in its largest sense makes up London.

The five-light east window of St. Paul's, Herne Hill—a Geometrical Middle-Pointed one of slightly Italianising character—is a singularly fine example of Hardman's work carried out during the year 1859, and deserving of more than passing mention for the firmness and brilliancy, yet delicacy, of its tones. Perhaps the groups representing scenes from the Passion and Resurrection of Our Lord in the lights would have been improved by the use of white in the ground-work, but the figure of the Saviour seated amid the Seven Candlesticks within the large cinquefoiled circle is of unusual beauty, white and red being the prevailing colours, while praise must be awarded to the small seated effigies below the large groups, and which, treated predella-wise, breathe quite the old Pugin spirit.

Mr. Street, under whose eye this window at St. Paul's, Herne Hill, was carried out, had just then rebuilt the church on the site of an edifice in the Perpendicular of 1845—one of those struggles after the realisation of ecclesiastical decency and magnificence as creditable to its projectors as it was lamentably frustrated by the incompetency of the architect; one of those failures which, much too common at that stage of the Church movement, sufficed to prove a warning into what hands willing hearts were too prone to commit the execution of their pious desires. When it was first opened St. Paul's, Herne Hill, attracted as much notice as the neighbouring St. Giles, Camberwell, and chiefly on account of its decoration in stained glass and encaustic tiling (such as it was), the *Illustrated London News* of the period giving a lengthy account of the church and its fittings. However, in 1858 the building was so damaged by fire as to necessitate its almost entire reconstruction, a task entrusted, as already mentioned, to Mr. Street, who, when we remember what his style of predilection was at this time, would, had it not been for the existing remains and plan of the old structure, have translated it into a much more un-English form than it presents. An extremely pretty feature of this church is the clerestory, which has in each bay a pair of circular windows variously traceried—a mode of fenestration not infrequent in Norfolk, the church of Terrington St. John, near Wisbech, affording an instance of such treatment. Inside the simple circular columns are very un-English looking, having capitals boldly carved by Earp. One of these caps on the north side, composed of dogs boldly projecting with half bodies, carries off the palm for originality and vigour; but it is hardly possible to admire the two narrow courses of dark marble—one under the capital and the other just above the base—with which Mr. Street sought to relieve the white stone of his piers. This, however, is but a detail, and, on the whole, St. Paul's, Herne Hill, must be reckoned among the most striking churches of the transpontine suburbs, meriting in every way the praise bestowed upon it by Mr Ruskin, who observed that it was "one of the loveliest churches of the kind in the country, and one that makes the fire a matter of rejoicing."

Worcester Cathedral. Choir looking East.* (*Since the Restorations of* 1863-74.)

A very good window, carried out by Hardman under the superintendence of Street, is the triplet of lancets at the end of St. Michael's, Oxford, placed there at the time of that church's restoration, about 1855; but this is surpassed by the east window of Wantage Church, perhaps one of the most charming works in which those two names, "familiar in our mouths as household words," are associated.

The restoration of Wantage Church under Mr. Street between 1856 and 1857 is one of those (happily) numerous instances of how the ecclesiological movement reached the country generally; of the gradual trickling of the stream through the quiet, drowsy towns and villages, washing away the dust of a century and a half. Effected as it was under the régime of one of the most deeply respected pastors of the High Church Revival, Rev. W. J. Butler, the late Dean of Lincoln, a most earnest preacher and model parish priest, who was endowed with the gift of organising those sisterhoods which have been one of the most valued fruits of the Church movement, the restoration of Wantage Church is of more than ordinary interest. It was in this quiet old town amid the Berkshire Downs that grew one of those most useful bodies of women who now undertake and superintend the work of nursing, rescue and training, bringing help and comfort to the afflicted, sick and fallen, and carrying works of mercy full of untold blessing to thousands in the fetid courts and alleys of London and our great towns—the various picturesque, and in some instances really imposing, blocks of buildings with which the town is dotted affording ample proof of the success which has attended their institution.*

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* The accompanying views of Worcester Cathedral are given in anticipation of some remarks upon the painted glass, &c., in a future issue.

Both in drawing and tincture this glass of Hardman's in the east window of Wantage Church is widely different from that worked out by him under more Puginic influence; indeed, both here and in that just alluded to of St. Michael's, Oxford, we perceive an adumbration of that unconventional type which became later on a *fait accompli* in the churches of St. John, Torquay, and St. Mary Magdalene, Paddington, as well as in Bloxham Church, one of a noble trio to be visited from Banbury, and restored by Street during the later sixties. The effigies represented in the Wantage window are those of St. John, St. Paul, the Blessed Virgin, St. Peter and St. Andrew, all standing under conventional cinquefoiled arches surmounted by spiral canopies, behind which the ground is alternately blue and ruby, and against brown dossals over which the ground is deep blue. St. John has a white upper robe lined with deep red and a carmine under robe. The chasuble-like robe of St. Paul is green, and contrasts well with the white and crimson of his other vestments. The Virgin is, of course, in white and blue, the Holy Child being vested in a delicate green. White and blue are also the prevailing hues in the vestments of St. Peter, a band of red edged with gold being introduced into the under robe with rich effect; red and white in those of St. Andrew. Beautiful as are all these figures, they are perhaps surpassed in delicacy and grace by the Crucifixion group within the great quatrefoliated circle, where the tinctures, aided by the unstinted use of white, flash forth with a jewel-like brilliancy in emulation of some of the choicest specimens at York.

THE CHOIR OF WORCESTER CATHEDRAL BEFORE THE RESTORATIONS OF 1863–74. (*From a Drawing by Charles Wild.*)

Another very splendid but much later specimen of Hardman's work in Wantage Church is at the west end, where, in a pair of two-light Late Decorated windows with a buttress between them, are gorgeously vested figures of the Four Doctors in the sinister window and of the Evangelists in the dexter one. The Early English arcade in this church, with its simple cylindrical columns and almost equilateral arches, is very remarkable. The western arch is, however, modern. Congregational needs calling for an extension some twenty years ago, it was added by Mr. Butterfield, whose seating of the newly-acquired space sufficiently indicates the hand under whom the work was carried out.

Reverting to the Metropolis, a short walk from the church at Herne Hill, touched upon in the early part of this paper, brings the ecclesiologist to two containing favourable specimens of Hardman's glass, and built between 1868 and 1874 from the designs of the late Mr. Chas. Barry in that locality known as Dulwich Wood—St. Stephen's, Sydenham Hill, since made remarkable for two frescoes by Poynter of incidents in the life of its titular saint, and St. Peter's, Lordship Lane, one of the most sumptuous and most beautifully finished churches built in the South of London since the Revival,* though inferior in point of scholarship to such works as St. John Divine, Vassall Road, and St. Agnes, Kennington Park. In several points these two buildings resemble each other—in their style, which is a somewhat freely treated mingling of First and Second Pointed; in their somewhat excessive breadth, which deprives them of that solemnity so characteristic of churches built more directly under the influence of the Movement; in the placing of one of the principal entrances at the east end of the north aisle, and in the fenestration of their semicircular apses. At St. Stephen's, Sydenham Hill, the tower and spire is engaged at the west end of the north aisle, the nave projecting, but aisleless, one bay beyond it. On the south side the aisle stops at the second bay from the west, with, internally, a not very pleasing effect, the two westernmost arches of the seven-bayed nave being constructed in the wall, from which it does not seem probable that they will be emancipated. This short aisleless western portion of nave is also found at St. Peter's, where the mass of the building assumes an air of much grandeur from its obliquity to the main thoroughfare. At St. Stephen's the tower and spire are pleasing both in proportion and detail, but the steeple of St. Peter's cannot be pronounced worthy of the costly and beautiful fane which it surmounts, the lower portion, which forms a porch to the eastern entrance, alluded to as common to both churches, being overloaded with ornament, while the belfry stage and spire are tame and commonplace. At St. Stephen's the nave arcade is of white stone, the circular piers having very fairly sculptured capitals under their quatrefoliated abaci, while from figures of angels rise slender shafts bearing the principals of the open-timbered roof which, owing to the gablets surmounting the clerestory windows—small ones of two trefoil-headed lights traceried with a quatre or a trefoil—assumes an appearance of somewhat disagreeable restlessness and complexity, not to say cumbrousness.

At St. Peter's Mr. Barry, by omitting these gablets and employing unfoliated lights and circles in his clerestory windows, secured a much greater air of sobriety and dignity for that church's elevation; but it is impossible to avoid regretting that the excessive breadth of the nave prevents the graceful arcade, with its quatrefoiled pillars of red Mansfield stone and delicately flowered capitals, from being taken into a pleasing *coup d'œil*, causing it to retire into comparative insignificance.

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* The first Anglican Sisterhood was established under Dr. Pusey and Rev. W. Dodsworth (incumbent of Christ Church, Albany Street), at No. 17 Park Village, Regent's Park, on the Wednesday in Easter week, March 26, 1845, two of the first Sisters being Miss Jane Ellacombe (daughter of the vicar of Bitton, Gloucestershire) and Miss Mary Bruce. Seven years later the members, who had increased in numbers, removed to St. Saviour's Home, Osnaburgh Street, which had been built from the designs of Mr. Butterfield by one of the Sisters—"Sister Clara" [Miss Powell, of Foxlease, New Forest], now the senior Sister of the Anglican Communion, and after fifty-three years of service still working at Ascot Priory.

* The foundation-stone of this graceful contribution to South London ecclesiology was laid on SS. Philip and James's Day, May 1, 1873, and the writer (at that time at school in the neighbourhood, and a chorister of St. Peter's) can recall the interest and delight with which every stage of its erection was watched until its opening on the wretchedly wet Sunday morning of October 4 in the following year. The elaborate tiled floor of the chancel, representing a large cross with the Agnus Dei at the junction, and the emblems of the Passion at the ends of, the arms, was the gift of Mrs. Calvert, wife of the incumbent of St. Peter's, for whom the writer will ever retain feelings of the greatest respect. The stained glass in the large west window, by Heaton & Butler, forms his memorial. The upper portion of the tower, the spire and the western bay of the nave are subsequent additions which individual generosity made possible.

In either church the apse is lighted by seven windows, the three side ones being lancets, incipiently traceried, and that in the centre a three-light one with Geometrical tracery, a novel and pretty effect being imparted to that at St. Peter's by the manner in which it is surmounted by a gable springing from shafts corbelled out of the string-course, both gable and shafts being crowned by statues of the apostles St. Peter, St. Paul and St. John. Hardman's glass at St. Stephen's occupies the six lancets, and represents in firm, rich tinctures the Four Evangelists and two angels ; a large five-light window of his workmanship at the west end, and somewhat later in execution, being devoted to scenes from the life of the church's patron saint. It is not a little remarkable that the names of Hardman and Powell, though in this instance quite unconnected, should be brought into juxtaposition in the apse of this church, the three-light window over the altar being the work of the latter, and, in common with much executed by Powell about the same period, affords an instance of designing *ad naturam*, but with sufficient archaism imported to suit it for devotional purposes.

In the more grandly-dimensioned and sumptuous apse of St. Peter's the windows appear through arcades on coupled shafts of marble, filleted and crowned with boldly-foliaged capitals united by an elongated square abacus, the effect of which, taken in conjunction with the graceful diapering of the apse walls, both above and below the windows, is undeniably handsome. The ensemble is, however, sadly impaired by the feeble reredos and by the stained glass which, so heterogeneous both in design and selection of subjects, has been allowed to slip in to the six lancets, a position where uniformity of design i not absolute monotony was surely desirable. Hardman's glass in the window above the altar was in position when the church was opened in 1874, and is so very good and brilliant as to cause regret that the remaining windows were not entrusted to the same hands. The Crucifixion occupies the central light, SS. Peter and Paul either side one. Treated predella-wise to these are small parallelised scenes from the Old Testament, while a very graceful Majesty fills the foliated circle in the arch.

The names of Barry (in this instance that of Mr. E. M. Barry) and Hardman appear in connection with the decoration, some five-and-thirty years ago, of the under chapel, erroneously styled the crypt, of St. Stephen, in the Palace of Westminster.

St. Stephen's Chapel, like every similar structure, notably the Sainte-Chapelle at Paris, the church at Assisi, sundry German royal chapels, St. Etheldreda, Ely Place, and the little chapel which Mr. Butterfield enlarged to serve the religious wants of St. Augustine's Missionary College, Canterbury, was of two storeys.

At Westminster the upper one became in time the House of Commons, and the lower one at a later date the Speaker's dining-room. After the fire of 1834 the upper chapel was, in the name of architectural uniformity, ruthlessly swept away, its place being usurped by what is now called St. Stephen's Hall. The destruction of this gem of English architecture, for whose adornment the best works of sculpture and painting were put into requisition, accomplished, there still remained of the religious portion of the Palace of Westminster the under chapel, a graceful specimen of Edwardian Pointed, and the Tudor cloisters, which latter furnished Sir Charles Barry with the motif for the entire new Palace.

Early in the work of building the Houses of Parliament these cloisters were carefully restored, but to serve as a cloakroom for members, the under chapel of St. Stephen luckily remaining untouched and unmodernised in the condition of ruin to which the fire had reduced it. Then it was restored architecturally, no attempt at mural or vitreous decoration being (happily) made.

In this state, clean, white and empty, this elegant specimen of Pointed remained until about 1863, when it was placed in the hands of Mr. Barry for a consistent embellishment. To Messrs. Clayton & Bell was entrusted the decoration of the roof in the altar bay, angels in graceful positions on a ground of gold and scrollwork being introduced, and that of the unfenestrated eastern wall, against which the vaulting, really simple, but complicated in appearance by the ribs and by the trefoil-headed openings to the windows, dies away with so graceful a curvature as almost to produce the effect of an apse.

Wantage Church from the South-East.

Wantage Church. The East Window.

The other portion of the roof underwent a somewhat more subdued but no less graceful method of decoration from the brush of Mr. Crace, while the vitreous portion of the work was given to Messrs. Hardman. The windows, recalling by their tracery the Geometric of the earlier Edwardian style, rather than that which was in vogue when this under chapel o St. Stephen was being built, are of four lights each, and illustrate, commencing with the first window on the north side, the history of the chapel's titular saint. The subjects are placed within medallions of an elongated form, terminating both top and bottom ogeewise, and on a grisaille-patterned ground, care having been taken on account of the building's lowness and dimness to introduce as little positive colour as possible into the groups. The result is that the vitreous does not trench upon the mural embellishments of the structure, as is too painfully the case in works of a similar kind carried out about the same period in the apsidal chapels of certain great continental churches. For its size, therefore, this under chapel of St. Stephen at Westminster may be cited as one of the most successful specimens of colouration, mural and vitreous, natural and applied, in Northern Europe, and it is only to be regretted that a building so religious in ensemble should be permitted to remain, what to all appearance it is, a mere *objet de luxe* and of curiosity.

THE CHURCH AND ART.

DURING the Church Congress which was held last week in Newcastle-on-Tyne an evening meeting was devoted to the subject of "Art: its Relation to Religion." The Bishop of Chichester presided.

Painting.

The first paper read was by Mr. W. Hole, R.S.A., who said:—When I use the word "art" I wish it to be understood that I do so in a wide sense. It is usual to speak of the fine arts; we talk of the art of painting, the art of sculpture, the art of architecture, as if they were quite independent and self-sufficing, as if their kinship was one of race merely, and not of family. It were truer to say that there is but one art, and that its members, though capable certainly of separate existence as units, are incomplete save in co-operation. To adapt with all reverence the words of St. Paul, "As the body is one and hath many members, and all the members of that body being many are one body, so also is art. Sculpture cannot say to architecture, 'I have no need of thee;' nor, again, can architecture say to sculpture or to painting, 'I have no need of you.' There should be no schism in the body, but the members should have the same care one for another." Now, while I acknowledge that the Church has readily availed itself of the service of architecture, I submit that sculpture has in recent times received but timid, nay, almost apologetic recognition, and that the claims of painting, the very life-blood, as I might say, of the body of art, have been almost, if not altogether ignored. The religious painting has had to shift for itself as best it may, to jostle for a place among incongruous surroundings on the walls of our exhibitions, or to be hawked about and exhibited under artificial light (a shilling a head for admission) in the back shop of a picture-dealer.

Strangely, indeed, are we creatures of custom. We do not miss what we have never possessed, and are content with imperfections to which we were born. How otherwise shall we account for the obvious fact that the average Briton, unaccustomed for centuries to associate the idea of colour with construction when he steps beyond the limits of his own mansion, should feel no resentment at its omission, nor is conscious that anything is lacking? And yet I believe that the faculty is merely dormant. We certainly possess a sense of colour and indulge it by the use of decoration in our private dwellings. There we would not tolerate for a day the barrack-room barrenness and the silly, meaningless painting which distinguish the walls of places which we dedicate to the service of God. Many of our homes are beautiful; thought, skill and taste have been expended on their decoration, furniture, painting and textiles contributing their quota to the sum total of rich, restful colour and harmony of tone. We decorate our houses for our own personal comfort and enjoyment; aye, and our restaurants and places of public amusement, for the children of this world are wise in their generation, knowing well the attractive influence of beauty. Is it too much to claim that at least as much should be done to make the house of God more worthy of our offering and of His acceptance? We enlist music in the service of the Church. Our churches themselves are architectured nobly and well, and shall we not use such influence as we possess that still more be done; that ordered and harmonious colour shall be added to graceful structure, and by completing the round of artistic unity, not only make, as I say, an offering of the best we can produce, but attract and retain to God's worship the hearts of many who are susceptible to such influences, and others who come, perhaps, merely to admire, but remain to pray?

Having thus ventured to advocate the revival, as I may call it, of mural decoration in our churches, and especially mural painting, as that department of decoration which I understand the best, it is necessary to add a few words in explanation of what I mean by the words and to define the principles which underlie all good and true decorative painting; so that we may have a standard by which to distinguish right from wrong, withhold approbation from work attractive, perhaps, to uneducated perception, but wrong in principle, and appreciate the merit of work which fulfils its first requirements, though lacking in less essential qualities. It is most necessary to establish firmly this correct standard of taste, for the confidently expressed opinion of those whose zeal is not in accordance with knowledge has a definite influence over those who know still less, or who do not take the trouble to think for themselves, and is a formidable barrier to the progress of true art, by the encouragement which it too often accords to that which is "claptrap" and meretricious. The reasons also which are urged as a basis for these opinions can commonly be reduced to nothing more definite than the words, "I like." To quote the words of Sainte-Beuve:—"The first consideration is not whether we are pleased with a work of art, nor is it whether we are touched by it. What we seek above all to learn is, whether we are right in being pleased with it, and in being moved by it and in applauding it."

As regards mural painting in particular, it is to be remembered that we must not base judgment of a decoration of this kind upon the knowledge which we may happen to possess of the essential qualities of the cabinet or easel picture. Each of these is, or ought to be, a record of the artist's impression of fact, beautifully arranged and beautifully expressed; but the easel picture is a thing *per se*, whole and self-sufficing. It bears no relation whatever to anything else, not even to the frame which is its architectural servant, contrived simply and solely in order to confine attention to the beauties of the picture itself, and to ward off the effect upon it of any other object in the neighbourhood. A mural painting, on the other hand, is not an independent and isolated work of art, but part and parcel of an architectural scheme. It starts from an architectural basis, and its merits or demerits as decoration must be judged entirely with reference to its environment. Whether, therefore, it take the form of a picture, or one of simple pattern, the decorative painting must be designed in conformity and in harmony with its surroundings, and with due consideration to essential features of the building or surface whose characteristics it is its duty to beautify and enhance.

In these remarks I have tried to indicate the direction in which art has been of greatest service to the Church in past times, and also the principles by which it has been guided, and I have entered a plea for the restoration of art to the position of dignified service which it once occupied in the Church's estimation. The time is ripe for a development and revival of religious art in this country. There is an ample and ever-widening field for its exercise, and neither the skill nor the spirit is lacking. It needs but co-operation on the part of clergy, laity and the artists themselves in order that these elements of success should be united. And on behalf of the latter I would say in conclusion that among the artists who are striving to consecrate their work to something higher and nobler than worldly success or ambition there must be many who experience an Elijah-like feeling of depression in their isolation amidst the crowd of those whose aims and aspirations are widely different from their own. I would therefore welcome with thankfulness the formation of a guild or brotherhood of Church artists, who by this means would be brought into touch with one another for their mutual help and encouragement—a guild which should include in its membership architects, painters, sculptors, workers in wood, metal, glass and needlework, all in fact who are willing to devote as a free gift a tithe of their time, skill and labour to the glory of God and the service of the Church.

Sculpture.

Mr. Stirling Lee said:—Never in any country have we had a set of men more earnest and capable than the sculptors of to-day in England, and that the Church should have the service of these men is one of our reasons for coming here to-night. But do not expect us to praise that which to us is dead and meaningless, the production of the spirit of commercialism, and call it art. When I make this statement, you will naturally ask me what I mean by commercial in art. This is in no way a slight on commerce, but art cannot be produced under the same conditions that make trade successful, for these reasons. One has its methods and limitations, the other has not; to one every hour is money, to the other time does not count (sometimes months of work is destroyed); one is the satisfaction of the fixed wants of the masses, the other is unnecessary to the ordinary demand of the day, but is the reaching out of a man to attain his great ideal.

In illustration, take the two methods in art. An architect receives a commission to design a reredos; he may make a sketch, this is sent to the carving firm, it is measured and priced (always at the lowest possible), the sketch is handed to the young man modeller, not the head of the firm (he is occupied with the business part); this has to be modelled for a certain sum, then handed to the carver, and all finished within the price given, to have a profit for the head of the firm to live by. The artist is asked about the work; he will first see the church, will consult about the subject, then design his work *in situ*, work out his sketches until he has found his subject, then model it himself, altering and altering until every part comes in harmony; if a carver, he finishes it himself, and finally, when taken down to its place, he will be bound to receive a shock from the effect of the different lighting; let him study it ever so carefully, he will find something to do, and does not leave his work till he says with a sigh, "I cannot do more." In the former case they, if honest, would say, "I could not do less." And between these two extremes we have every degree, for we have good artistic firms, and we have commercial artists. Our religion teaches us that we must be led by a power within us which it calls the "Spirit," and which will guide us into all truth. So the artist works with the same idea; he must be true to his inmost nature, and the work of his hands must be true to himself, if he is to have any joy or peace in this world. It is the old truth, a man will work for what he loves; the business man will work to make money, to be able to do with it what he loves; the artist does his work because he loves it, and finds his joy and satisfaction in his handiwork.

With the revival of the Church came also the church builder and architect—Pugin, Scott and the masters Bodley, Gilbert Scott and Sedding; with this Gothic revival came the demand for carvers—Thomas Philips and others. The demand for work became great, and thence grew what to-day we call the church decorators and architectural carvers. Our position is this—that the clergy only know the church architect and the firms that have grown up to supply their wants. The artists, sculptors and painters have been quite outside this Church revival until quite recently. I can only think of one case where our great artists have been associated with the Church—Lord Leighton's fresco; and our sculptors only with monuments, so that we may be called the "Sculptors of the Dead." But with the Oxford Movement came Ruskin, and with him William Morris and Burne-Jones; both, I believe, were destined for the Church, but have expressed themselves in art. To-day we have many of our clergy anxious to make the Church of God as beautiful as it is in the power of man to do, and we have artists endued with all the talent and spirit for the work. With the object of bringing these together, the clergy and the artists, we now have two societies, "The Clergy and Artists' Association" and "The Church Crafts League," and to-night we meet together in congress that the subject, Art and Religion, may be discussed in the spirit of striving to get at what is truest and highest in that sphere of life in which it has pleased God to call us.

Having come to our present position and our attitude to each other, it will be as well to just touch on what part of nature is developed and touched by art, and what part of religion can best be revealed by art. God made all things well, and He gave to man certain channels through which he might reveal the beauty of his creation. We call them senses, and through the sense of sight and touch the faculties of our brain, called sense of form, or colour and all things comprised within these, are developed; the impressions we receive we express again to the world in the form we call art, and by the power we have of transmitting great and noble feelings to others are we classed talented, genii and, in some cases, inspired; so the very name that we give to these gifted children of nature proves that they should be used by the Church, and in the service of their religion. Are our natures affected by art? Has it any influence? Take a child—it is hurt or is ill; the mother nurses the child, and if she has a note of music in her composition, she soothes it to sleep by singing. I think that everybody accepts the power and use of music in the service of God; true music is the most sensuous of the arts, but all arts can play upon us as music does, in degree, according to our natural power of reception. Colour can be out of key or tune, form can be bad in proportion and can have quite as disturbing an effect as a note out of tune on the dilapidated harmonium of your mission room. To be reasonable we must grasp the fact that our sense of sight and touch are every whit as keen as that of hearing or smell—perhaps that of touch the most sensitive, certainly to a sculptor, who uses it most, and it is, therefore, most developed in him. This is art from the sensitive side, but art is also a means of expression, and has its mental side.

Another great question is the present legal attitude of the Church towards the figurative means of expression. When going for my holiday I bought an evening paper, and was thinking about the Church Congress. The first thing that I saw was an application for a faculty to erect a screen, with the figures of the Crucifixion, St. John and St. Mary. This application was refused as illegal. I at once wanted to write my paper on the illegality of art in the Church, but did not. The possibility of anybody worshipping a wooden figure (they might a golden) is absurd, yet the Church and art have to face this position of the law, made in the darkest days of crass ignorance, before we can use that form of figure which has been the subject of the greatest artists of the world. All who can travel from all parts of the world to see these works—the only thing they can say against them is that their effect is too great. The Church does make use of the figurative language; the church is itself a figure—its form is mostly cruciform, its dome, its spire and its divisions are figures; the nave, the choir, the altar, the ceremonials, the water, the bread, the wine are all figures—outward, visible signs. Where can the line be logically drawn? What is legal and what is not? Apparently the culminating figure of which all these are but parts is not. So in the divisions of the Church which are allowed, the law forbids you to illustrate the reason why those divisions or steps. The figure of the crucified Christ can alone show that by Him the gates of heaven are opened unto us, the veil rent that we may approach boldly to the throne of grace. And again at the altar, the ever-present Saviour interceding for the whole world, these subjects are complete in the figure, they require no words, they stand alone, an everlasting illustration of the great acts of redemption. It has been my great joy to have just completed a reredos in metal, the subject of which was the worship within the veil—Christ interceding for the Eastern and Western Church and the world at His feet. The side panels, the worship of the cherubim, bowing down their faces to the ground, covering them with their wings, and were they not ordered to be over the mercy-seat? But you will truly say that the realisation of the Presence is something to be felt in the spirit. But how often do we require to be reminded of it? How soon do we come down to the material world? How often do we require these key-notes to lift ourselves from the tangible and visible? So we cannot do more than by making everything around speaking of heavenly things, so that the Church may be a living, speaking figure of the Christ. The nave, the body, the material world; the choir, the worship of the heavenly host; the altar, the presence of the ever-living Saviour and Author of Life Divine, where the weary may withdraw from the world on earth to the quiet peace of heaven, which passeth all understanding.

Architecture.

Mr. Edward S. Prior, M.A., said:—I trust that the speakers, who have so ably represented painting and sculpture will not suspect me of disrespect to their arts when I pointedly speak of architecture as the practical art. Architecture has necessarily been church building, nor has the Church been able to say to the builder, "I have no need of thee." And I take this practical quality of architecture as my text—upon this platform the art of building can come into relation with religion.

I had the advantage this summer of hearing two great speakers of our Church refer to the connections of religion and architecture. The Archbishop of Canterbury eloquently described the effect of great church building—how its contemplation lifted the heart of the worshipper; what suggestions of reverence grew out of its ordered immensity—the still voice of its perpetual preaching. Far be it from me to deprecate this conception of architecture, or to minimise what is a genuine practical quality of its expression. The Bishop of London, who followed him, went, however, further. He suggested that architecture found its ideal in Church work, because that alone could lift it above the drudgery and meanness of everyday needs. And, further, that it was by their association of painting and sculpture in their buildings that architects must make good their claim to be artists. Now this was sad hearing for architects: it put my art of architecture in a false position—false historically if I might say so to an historian—for never in history has architecture been an art save by its own quality of practical building. And neither to the Church, on the one hand, nor to painting and sculpture on the other, has it owed this quality. And depressing, too, was the bishop's suggestion in its bearing on the work of to-day. His words were perhaps half-ironical, but the suggestion made that architecture can be an art outside its practical use, is what perpetuates its degradation. While it is taken that the Church can supply an ideal or style to building, and sculpture and painting can make its decoration and thus is made art, which without these is only practical ugliness—so long as this idea is abroad must the Church miss the meaning of architecture and make no good use of it.

While it may be a question whether art can come into definite relation with religion, it can be no question that such relationship must base itself on real expressions, not on false and make-believes. Yet if we look at the building work of to-day one can only observe that church architecture is of it all the least real, the least progressive, and the least conscious of practical purpose. The amount of money and design that has been put into church building during the last fifty years has been very large; yet certainly more than half of this has been work of supererogation, in adding the decorations and ornaments of Gothic and other copied styles outside the practical necessities of accommodation. Yet no life of architecture, despite the expense and pains given, has been realised. Church building has set no example, it has kept itself from no abuses, it has created no hope among artists and little reverence. Is not this because it has missed the practical purpose of building which alone makes architecture art?

I go at once to the particulars. In how many cases has church building sought the aid of architectural competition? There is nothing to be said against competition in the abstract as one of the seeming laws of our existence. But an architectural competition is not one in real work—in building capacity, but in the presentment of it—the drawing of design. I am not concerned here with the abuses of honesty which have made architectural competitions a byword, but with the practical futility of instituting a competition in one thing—the designing on paper—when the thing to be selected is another—the ability of a church-wright. That there is a practical failure in the method of architectural competition has been acknowledged this thirty years. It clearly proposes a false standard to its competitors—that of pleasing by representation, not by work. So far as they are architects, workers at building, they are degraded by forcing themselves under such a standard Nor has the Church disguised its opinion of those thus invited to degrade themselves. The conditions of church competitions which have come under my eye are such that they express contempt, they have all the unfairness of the usurer's bond, giving nothing and taking all things—that legal security which the commercial sweater exacts from the victims of necessity. Under such conditions a church competition lately, in the South of England, proposed to spend 5,000*l*. It obtained 150 competitors; and, since six weeks of work would be necessary for each church design, 900 weeks of useless unpaid work were spent; useless, for of what avail to this or any other church were the 149 rejected designs? The out-of-pocket expenses of the candidates exceeded, probably, the proposed outlay on the church.

Of course, the Church did not realise this view of its architectural procedure. It was only doing what others do; it was only taking what it could get; there was no compulsion on the architects to compete. So the usurer says, "The borrower signed the bond of his own free will." But the art of architecture does realise the waste, the low ideal, the practical futility of architectural competitions, and refuses to appear in competitive churches. Let it be that money payment is never the payment of art; that the exercise of a man's faculties in a noble purpose is its own reward; that church design is such a purpose, and so is never wasted. So, doubtless, the Church thinks, but does the Church honour this exercise? Let us see how.

It has been too seldom that the proposer of church building—rejecting the evils of competition and the status of professional business—has proceeded on the common sense plan of selecting an artist whose art he perceives to be one of a personal ability in building. Still not seldom have church builders, parson and architect alike, desired and spent themselves on the best expression of church building that lay within their means; and with such truly, "Laborare est orare." But there succeeds to this inheritance another incumbent; is there any security that he will honour the good work done? It is notorious that the incoming parson has no scruples as to the art of the church to which he succeeds. He can transform and ruin it as he chooses; feeling quite unbound by his predecessor's selection of his architect; handing the building over to commercial firms or others to add furniture, glass, screens and suchlike, which cannot but be an insult to the real work of an artist. I know a case where the patrons of a living, being the rectors, had the scruple that what was well begun should not be ruined by irresponsible additions. They forbade the introduction of manifestly vulgar and manifestly unsuitable fittings into their chancel. But the incumbent was wishful for what was denied him and went on a journey; the prohibited articles were smuggled into the church in his absence, so that he might have, but not know, and on his return plead six months' use. Now in thus getting furniture for his church by what in plain language was a trick he was applauded by his brethren, and the reason is clear. The patrons' control was considered unreasonable, for the architectural art of a church is in no honour compared with the ecclesiastical style of its fittings. However contemptible the art of such things, they are offered as gifts to the church; there has been paid money for them, and this money's worth of ecclesiastical style could not be refused. Such donations are the passport to the title of good Churchmen. I am not speaking without authority, for in the last six weeks has not a Dean publicly declared that only subscribers to its decoration can be regarded as having any interest in a cathedral? And how often do we not hear it said by our clerical friends, "Yes, we, in the charge of our churches, know the value, and wish the religious expression of real art. But what are we to do? Our people will have what they can see in the shop window or pick out from the tradesman's catalogue. We know such things are contemptible, but can we refuse them?" No, you cannot refuse, if you do not feel that religion is hurt by a false art of church building and church fitting; if you think it no great matter that the artist cannot enter a church except with repulsion, must hide out of sight of the chancel and come to the altar with averted eyes. Yet they are a larger body than I think the Church understands, who are sensitive, whose consciences are troubled when they see the decorations of a church to be those of the restaurant and music-hall, redolent of money and display, but with neither heart, truth, nor faith in them.

Ecclesiastical style has been the cloak that has hidden the want of reality in our art, but that cloak is slipping away and showing what is beneath. Sixty years ago, in the fervour of the Gothic Revival, while it was believed that the forms of ecclesiastical architecture made religious art, and when in this conviction was done earnest work by Pugin, by Street and Butterfield, then churches could be built and decorated in Gothic style expressing this conviction, and not merely as business forms. But how is it now? The life of Revival Gothic is manifestly over. Its forms are an avowed professional stock-in-trade, and can be manufactured at so much the foot by any and every firm of tradesmen; but the earnestness, the self-respect of architects will not have such things. For it is perceived that the truth of art cannot be expressed in copies, in stereotype, in what can be stamped out by a machine—human or mechanical; but art exists only by the emotion of the artist and in the experimental creation that emotion fructifies. We have made a dead Gothic, have made caricatures, because by the nature of things living art was impossible to us. And caricatures, when seen to be such, what can they be in a church but offensive? The reproduction of Romanesque, Gothic and Renaissance church building, the nearer it gets to the originals, the more exact it is, the more machine-like—by that very quality has become the more false in spirit, the fouler to the taste, the less fitted for religious use.

It is in our old churches where "restoration" has made this offence the greatest. And I speak here not only of the actual removal, but of the swamping, of the true religious work of our forefathers—the contempt of it which our church additions show—so that in the last fifty years there has been a wiping out of that practical living work of the Gothic centuries, and of the seventeenth and eighteenth too, which in every church of our land forged a "catena sanctorum"—surely of value to the English Church, but now broken—its real links taken away and base metal substituted, so that there is scarcely a church left to us in which seven-eighths are not substitutions. The accomplished author of "Walks in Rome" speaks of what was till lately the best-preserved Saxon church in England, but now, he says, a "mere rebuilding" with "all that vulgar tiles, revolting glass, and coarse woodwork can give liberally bestowed." Of how many thousands of our churches must not this be said? Is there no other use of our old architecture possible, but to make it a block upon which to exhibit the failure of modern Gothic? When Edmund Street's nave to Bristol and Sir A. Blomfield's nave to Southwark are seen to be dead cold works, that do not honour to the old, is it proposed to add the same sham thing to Hexham?

It can be no practical use of our present-day art of architecture to bid it be untrue to itself and think not of its real function of building, but only how it can caper, as it were, and gesticulate in mimicry of artists long dead; now with cusps and crockets, and now with pilasters and friezes, now with reredos or baldachino, now with winged archangels and haloed saints, and now with amorini and cherubs, pretending to emotions which it feels not and cannot feel, because they do not grow out of its present needs. I believe that there are among Churchmen—lay and clerical alike—many, and I had almost said all who have thought on the matter—with the feeling that there should be building by the Church other than these forgeries of ancient church decorations, this burying of the history of the English Church, its love and its art, under the ashes of "restoration."

I believe the haphazard system in which our churches get their building is largely the reason that this feeling has not prevailed to produce a religious art of practical building. A definite authority in the Church, advisatory and suggestive, with at least such standing as would have enabled it to review all church building and all church decoration, would have done a great deal to prevent the abuses of open church competitions, of disregard and contempt of existing church fabric, whether new or old, would have set at least a value on real art by stating knowledge of its existence, so that it could not be removed or disfigured as a matter of course to make way for any rich man's gift.

But the real hope for architecture that it may again arise in the service of religion is not in any established authority, but in a change of feeling in the growing conviction that church building should meet the practical necessities of accommodation with the common-sense materials of good building and not with any copying of ancient models. For revivals and restorations are mimicking forms, but denying the spirit—the hypocrisy of art—and the hypocrisy of art is offence to religion. What was bidden to the feast would not come, for it was busy with ecclesiastical style, professional success and commercial profit. Art must be compelled to come in out of the highways and hedges of plain practical building and the plain true love of the artist.

Stained Glass.

Mr. Selwyn Image said:—

1. The important, many-sided, exhaustless subject before us this evening is the relation between art and religion. I have been asked, however, in this short paper to deal specifically with a single practical aspect of this relation, and as far as possible I shall confine myself rigidly to the one thing set me. I have been asked to speak to you about stained glass, and that certainly is a matter wholly relevant to the question we have in hand. For is there any form of religious art more popular, more prevalent, than this of stained-glass windows? Again, it is an exceedingly permanent form of art. A stained-glass window, provided violence is not done it, is practically indestructible; it is not a thing of a day, it will last for ever, and in its qualities of tone and colour will improve

more and more by the action of time upon it. This being so, I need hardly labour the point that in putting up a new window we ought to have all our wits about us, taking pains to understand as far as possible the sound principles of the business to which we have set our hands, prepared for no little sacrifice in securing a thoroughly good work, and not in a hurry and fidget to have something or another set up, contented if it is at once showy and attractive. A great number of new windows, as I have said, are every year erected in the country, and to tell the plain truth a considerable number of these are entirely uninteresting and worthless, and had far better be out of existence.

The reason of this unfortunate state of things is that so many of the people who have the management of affairs in their hands do not understand the principles and the proper conditions of what they are about. My effort this evening, my lord, will be to try and set forth in plain words two or three of these principles and conditions as at all events they appear to my own mind after some experience. That I have the whole secret of the matter to give you I do not for a moment pretend. That I can hope to carry you all along with me I do not for a moment dream. But I do believe that what I have to say to you has—well, has reasonableness in it, and is worth at least some candid consideration even where at first sight it seems a little too assertive and vexatious.

2. In the first place, then, let me say this. A stained-glass window in a church ought to be, and ought to be regarded as, a piece of individual fine art, just as a picture is regarded by a genuine connoisseur, who buys it for the enrichment of his house, and will have nothing in his collection but what from the artistic point of view is worthy to be there. When the matter is put to us in this simple form few will traverse the statement; it sounds like a truism. But here, as often in things more important, it is a truism upon which we have perpetually to be returning, lest, as the poet says, "Lest we forget, lest we forget." As a matter of fact, we do not find a large proportion of us, whether clerics or laymen, keenly alive to the principle we are insisting on. See how differently most of us behave in entering upon negotiations for a picture and for a window. If we think of going to the expense of an oil-painting for our dining-room we commission a good artist to paint it for us, and we do not expect to get it too readily or too cheaply. If we think of going to the expense of a stained-glass window for our church we go to a firm that turns this sort of decoration out rapidly at so much a square foot. I am not wishing for an instant to throw any stone at our stained-glass firms. Some of them are my very good friends, to whom I owe many a debt of gratitude, and their work is often most accomplished. But I know that they would be amongst the first to agree with me as to how much they are hampered by the widespread unreasonableness and ignorance of their clients. The clients force their hands both as to time and as to cost. And why? Because their clients in a considerable majority of cases do not seriously in their heart of hearts regard a stained-glass window as an important piece of quite fine art, which only a genuine artist can give them; they regard it much more on the same level as a bit of patterned stuff, or wall-paper or floor covering, the design for which, once made, is endlessly produced to be retailed at the yard for so much. We are not right, but altogether wrong, and we shall never advance a step in this matter until we recognise that a stained-glass window should be considered on the level of a fine picture, and can be produced only under the same conditions.

3. Three of these conditions are as follows:—First, it must be a genuine artist who designs and carries out or sees to the carrying out of the window. Secondly, we must be prepared to pay for our window handsomely, as we are prepared to pay for any other first-rate professional work. Thirdly, we must have patience, and wait until the work can be matured quietly and thoroughly.

I can well imagine a natural outcry at this point, and some of my clerical friends bristling up with the objection, "Yes, it is all very well, but on these terms what chance is there of my getting my church filled with glass before a blue moon?" Believe me, I quite understand the objection, I sympathise with it; it is most natural and practical. My effort to meet it brings me on to my second heading.

After all, a stained-glass window in a church is not a necessity—even from the artistic point of view it is not a necessity—it is a most desirable ornament, no doubt, something after which one should strive and make sacrifices for, but not a necessity. A window filled with plain clear glass, properly leaded into diamonds or squares, is a completely satisfactory thing. It cannot be stated too plainly, or urged too constantly, that it is far more dignified and artistic to have no decoration at all than to have decoration that is bad or paltry. I am thoroughly serious when I say that, supposing we have not the means to put wholly good decoration into our churches, we ought to regard the temptation to put up poor decoration as a temptation of the devil. Leave the place for the time being plain and unadorned; be content to decorate it little bit by little bit gradually, as you are able; refuse to have anything there in the shape of ornament which you could not take a sound judgment upon and feel that it would be pronounced, of its kind, good. As a matter of historic fact, in the old days—those days to which, so far as art is concerned, most of us look back admiringly—the builders and adorners of our churches again and again deliberately left their work unfinished, because to finish it properly at the moment was not possible; and so in faith and patience they left the completion of it to generations that should follow. One small good window in our church, a specimen of the beautiful art which those who know may look upon with unceasing satisfaction, is a far worthier thing to erect in the cause of religion, as well as in the cause of art, than twenty poor windows for all their glamour and momentary effect of completeness. A clergyman who realises this fact and strenuously acts upon it has trouble ahead of him—that cannot be denied for a moment; but if he has reasonableness and patience he will gradually win his people round bit by bit to see the soundness of his conduct and to appreciate it; of this, too, I have not the faintest doubt. At all events, in the literal sense he is a martyr in the cause of right and truth, and the day will come, whether he see it or not, in which his wisdom and courage will tell.

4. I pass to another point. In a large number of cases stained-glass windows are erected in ancient buildings—churches, for example, built in the Decorated or Perpendicular periods; and even our new churches for the most part are built more or less in imitation of some form or other of historic architecture. It is a prevalent idea that any decorations set up in these churches should be throughout in imitation of the particular style of architecture in which the building is erected; so that glass, for instance, set in a Perpendicular tracery should more or less be imitative in its manner of the glass which obtained when the Perpendicular style was in the ascendant. Now I have no hesitation in saying that I believe this idea to be a wholly false and harmful idea, and that, as far as it prevails with us, it stultifies our work, rendering it uninteresting and unprogressive. I believe it to be false on two grounds—on the historic ground and on the artistic. In bygone times, when an Early English builder, let us say, came along to alter a Norman church, he did not copy the Norman work, but he frankly set about the business in his own style; or when a Perpendicular builder came along to alter an Early English church he did not copy the Early English work, but he too frankly set about the business in his own style; and so on everywhere, right down to this century. Their work, therefore, had always about it at any rate this fundamental element of genuinely artistic work, namely, that it was the proper or natural individual expression of the feeling and thought of the people who produced it. It had in it, that is to say, the prime cardinal virtue of art; it had style, which is nothing else than an individual way of seeing things and of expressing in the terms of art what is so seen.

Now, of course, the difficulty which besets us of to-day, speaking of us in the whole as an age or people, is this obvious one—that as an age or people we have no one proper, natural, individual style in which inevitably we build and decorate. The reason of this it would take much too long here and now to try and explain, but the fact is patent and incontrovertible. But though as an age we have no distinctive style, there are plenty of good artists up and down amongst us, each of whom has a style of his own, and is a good artist precisely in virtue of his having it; and therefore after all we are not so utterly forsaken and badly off as at the first flush of things might be supposed. My lord, how does this bear upon the special subject of this paper, upon the art of stained-glass windows? Assuredly its bearing is obvious. If, as I said to start with, a stained-glass window ought to be, and ought to be regarded as, a piece of individual fine art, just as a picture is regarded, then when we want such a window we must go to an artist for it—that is to say, to a man with an individual way of seeing things and of expressing them, to a man with style. And when we go to him we shall say, "Give us of your best, give us something stamped with your own character and methods; here is the space that you have to fill, fill it in your own way; never mind that there is other glass in the building which other imaginations have conceived and other hands executed; fill this window, which is all that concerns you, with the finest work you are capable of, as the spirit moves you to fill it." In this way, and in this way alone, I venture to assert, shall we be getting into our churches the best that it is in our power to get into them, for in this way, and in this way alone, shall we be following sound principles of art, and—allowing for our altered circumstances—following, too, in the steps of those past ages whose remains so fill us with admiration.

I have purposely confined myself to but a few points suggested by my subject, but they are fundamental points not too commonly taken heed of. That certain difficulties would arise in trying to act upon them I am far enough from denying; but, after all, that difficulties lie in the way of a particular course is no absolute reason against a man's trying to pursue it. Whatever obstacles may stand against the application of the principles I have been laying down this evening, I believe them substantially to be true and necessary principles, if we wish the art of stained-glass healthily to flourish in our midst and to avail ourselves of its best fruits. And as such I very respectfully commend them to your quiet consideration.

The following letter was read from Mr. G. F. Watts:—

"Little Holland House, Kensington, 1900.

"Dear Lord Bishop of Newcastle,—Your invitation to write a paper upon the Relation of Art to Religion, I regret to say, I found myself unable to accept, limited, as I am, by the exactions of my own unfinished work and by want of strength.

"I could not, however, altogether reject the opportunity you so generously gave me of writing a few words to express my conviction that art, as we understand it, in its three presentations—architectural, pictorial and plastic—has exactly the same relation to religion as that which poetry and music have, and to assert for art the claim to a yet higher place than it is commonly understood to hold, convinced as I am that it is a Divine voice, uttering through all time its message to mankind, the handmaid of religion, lifting the mind into an atmosphere of wonder and of worship. As music echoes the Divine voice heard in creation, art should clear the sight to the manifestation of the Divine power in the loveliness of creation. The creative faculty in man, working in the same direction to interpret the same purpose, shown in the apparently loving care and intention, evident in beauty of line and colour.

"In no spirit of irreverence this may be claimed: the splendour, the order, the fine perfection in the smallest detail of form and structure, of perfume and of colour, apparently not in the least necessary to existence, as these are all occasionally absent, reveal to us the high position that beauty takes in the service of the Creator. May we not, therefore, claim for man's creative work such high uses in the service of religion, stimulating thought to high and noble action?

"One who would suggest ideas by form and colour is like the child of an artist, whose delight in the beautiful things he sees emanating from his father's studio finds expression in endeavouring to do something of a similar character; consequently art, being unconscious worship, should find place wherever worship is the object.

"I would also express my conviction that art is inherently part of the great oneness of a creation where the Creator has made His own house beautiful with all gracious and noble beauty of sky and of cloud, of mountain and of valley—a part of that creation in its vastness, its complexity and its completeness, one in its law, and in its obedience to that law.

"No art or science, and, indeed, no possible acquirement, can really be desirable that does not do something to develop those qualities which distinguish humanity from the lower creation, the purely and consciously moral perceptions, and still more those qualities on the spiritually sensitive side.

"On this side art should be unquestionably an important factor, for the highest, perhaps unutterable, thoughts can be presented to the mind by symbolic suggestions.

"To the eye that seeks this shall be made plain, the firmly-planted foot shall not be set down in vain, even though the law of conflict, not unkind, and necessary to avert stagnation, makes it hard.

"Failure is present in all highest endeavour. We have to know that nothing can be shaped by our hand but in the soft and the hard, the dry and the moist, in darkness and in light, but with reason and with love, the most conflicting elements can be used and combined into the finest harmonies—a voice breathing through the soul, making itself rather felt than heard, and yet giving intimations of truths enough for guidance, for hope and new stimulus to higher attainment."

SURREY ARCHÆOLOGICAL SOCIETY.

An interesting excursion was made on the 22nd ult. by the members of the Surrey Archæological Society, the place selected being Waverley Abbey, near Farnham, to which the visitors and local friends, who numbered about a hundred, were conveyed from the Farnham railway station in brakes and carriages, the drive through the old-fashioned hamlet of Waverley being greatly enjoyed.

When the visitors were all assembled at the abbey Mr. Harold Brakspear, F.S.A., kindly described the excavations in a most able and lucid manner. He began with the well-known early history of the Cistercian abbey founded in 1128 by Wm. Giffard, bishop of Winchester, who brought monks from the abbey of Eleemosyns, in Normandy, the Cistercians being a reformed order of the old Benedictine rule. Mr. Brakspear graphically described the sites of the earliest sacred buildings and the subsequent additions and alterations, pointing out, as he proceeded to the most interesting spots throughout the scattered excavations, various thirteenth-century tiles and other relics which had been unearthed during the work. Some tower piers were viewed, as well as the grave of the only abbot known to have been buried here, and in excavating the chapter-house a wooden coffin was discovered. Mr. Brakspear pointed out the little place adjoining where the monks were allowed to assemble for the purpose of conversation, they not being allowed to speak in any other portion of the monastic buildings. In directing attention to the only piece of wall really intact, he said that large quantities of freestone had been removed from the place for building cottages in the neighbourhood. One of the last places visited, and which seemed to attract the greatest attention, was the dining-room or refectory of the lay brethren, which is still in a capital state of preservation, and which possesses some of the finest groined arches in England, similar to those in the Temple Church in London. The object of the excavations is to get a complete ground plan of the famous Cistercian abbey.

GENERAL.

Mr. W. Emerson will be arbitrator in the dispute between the Corporation of Norwich and Mr. Warburton, the contractor for the Technical Instruction Institute.

A Course of Lectures on "The Production of a High-class Illustrated Magazine" will be delivered at the Northampton Institute by various experts. The first will be on Tuesday next, when wood engraving will be described.

The Negotiations for the sale of the Tintern Abbey estate were conducted on behalf of the Crown by Messrs. Bruton, Knowles & Co., of Gloucester, and by Messrs. Drivers, Jonas & Co. on behalf of the Duke of Beaufort.

A Stained-Glass Window as a memorial of John Bunyan has been set up in St. Saviour's Church, Southwark. There are two scenes from the "Pilgrim's Progress" introduced. One depicts the "Pilgrim" being relieved from his burden of sin at the sight of the Cross, and the other is an allegorical figure of "Faith."

Mr. W. Chawner, Vice-Chancellor of Cambridge University, stated on Monday that a sum of 35,280*l.* out of the Benefaction Fund had been appropriated for building. Syndicates had been appointed to prepare plans for (1) the botany school; (2) the law school and library; (3) the medical school; (4) a new museum of archæology and of ethnology; and (5) buildings for university purposes. Plans for the first three had already received a general approval, and authority had been given to prepare specifications and invite tenders for the whole of the first two and a substantial portion of the third. The rest of these plans and much else that was needed must at present remain in abeyance.

Mr. John Barr, of North Sydney, has been awarded the first prize of 400*l.* for the new General Post Office at Brisbane. The second prize of 300*l.* goes to Messrs. Hall & Dods, of Brisbane; the third of 200*l.* to Mr. George D. Payne, of Auchenflower, near Brisbane. Twenty-eight designs were received.

The Liverpool Architectural Society will hold its first ordinary meeting at the Law Library, 41 Castle Street, on Monday, the 8th inst., at 6 P.M.

A Memorial of the late E. J. Marshall was unveiled on Saturday. It consists of a portrait in relief, by Mr. Alfred Drury, A.R.A., and bears the following inscription:—"E. J. Marshall, headmaster of Brighton Grammar School, 1861-99. In gratitude for a life, strenuous, beneficent and world-wide in its influence, this medallion is committed to the Present by the Past as a memorial of the revered. Born 1833. Died September 30, 1899."

The Prince of Wales will lay the foundation-stone of the Royal Victoria Hospital, Belfast, in the spring of next year. The plans for the building are being prepared by Messrs. William Henman & Thomas Cooper, of Birmingham.

Colonel W. H. Walker, of Gateacre, has presented two pictures to the Walker Art Gallery, Liverpool. The paintings are *Kenilworth Castle*, by J. Constable, R.A., and *The Mare and Foal*, by Sir Edwin Landseer.

The School of Art Wood-Carving, Imperial Institute, South Kensington, has been reopened after the usual summer vacation, and we are requested to state that some of the free studentships maintained by means of funds granted to the school by the Drapers' and the Clothworkers' Company are vacant. The evening class is for the present closed, but to meet the requirements of those professionally engaged during the week a special Saturday afternoon class is held. Forms of application for the free studentships, and any further particulars relating to the school, may be obtained from the Manager.

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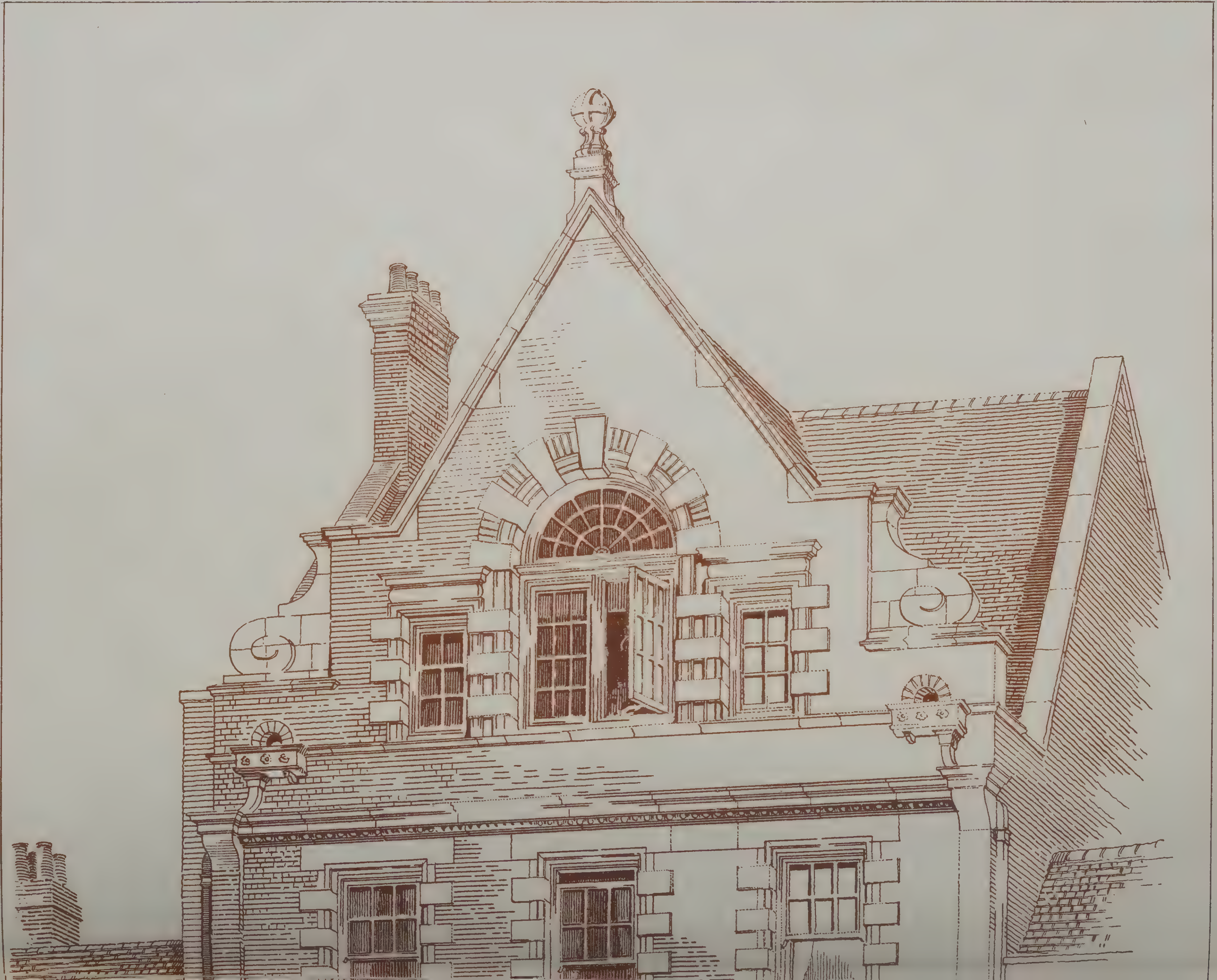

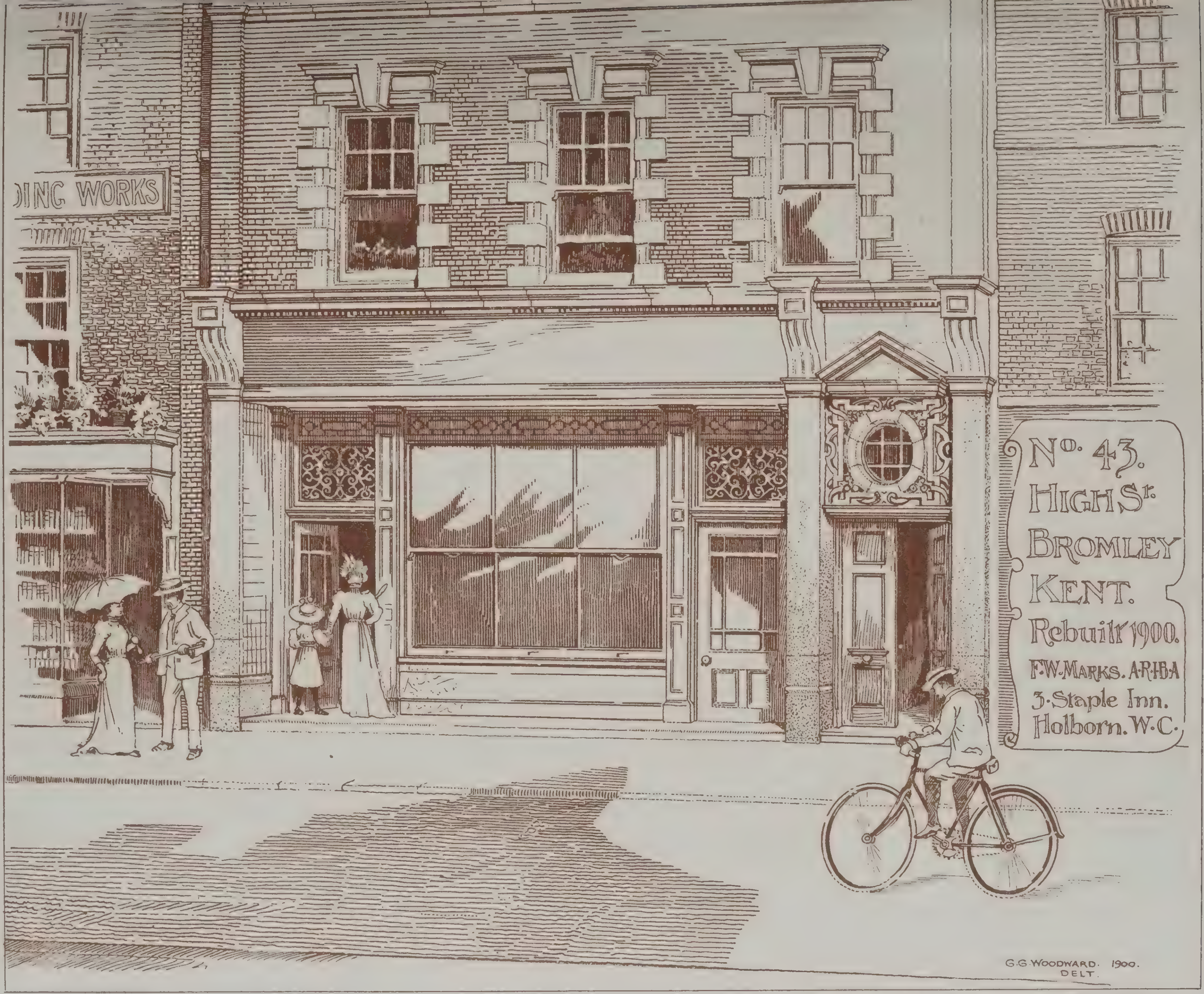
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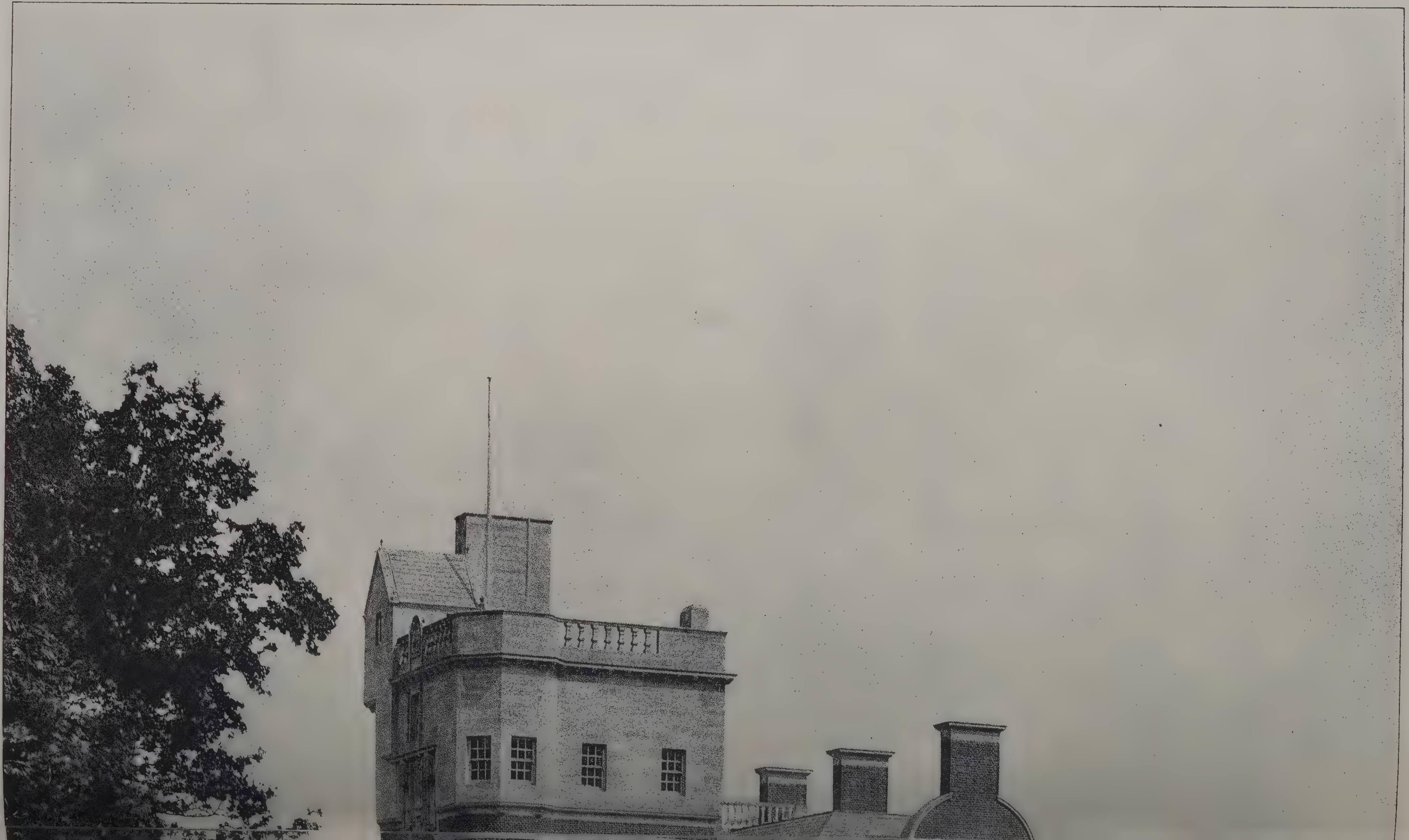

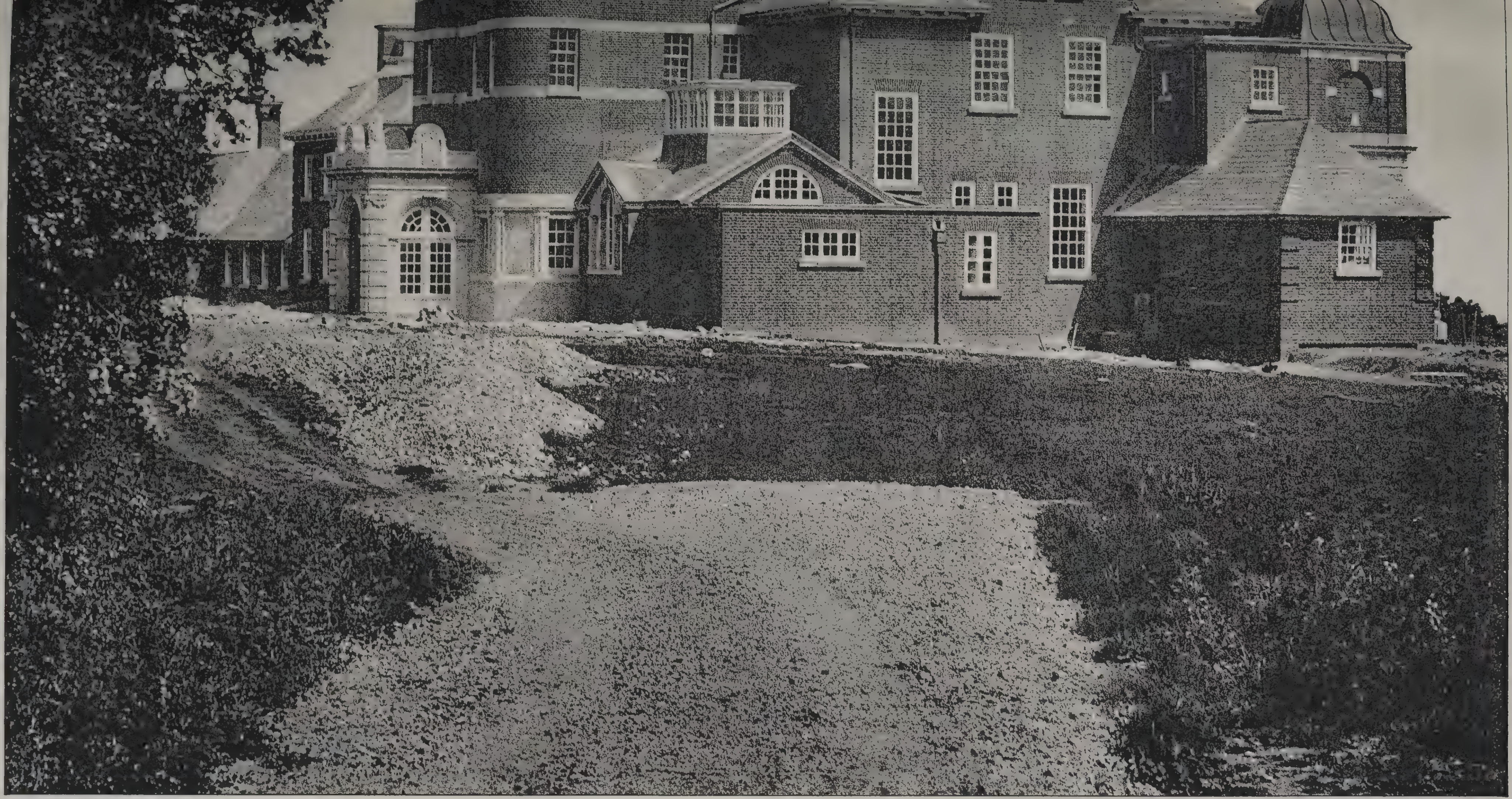

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"THE TOWERS," PANGBOURNE, FROM THE WOOD.

J. BELCHER, A.R.A., Architect.

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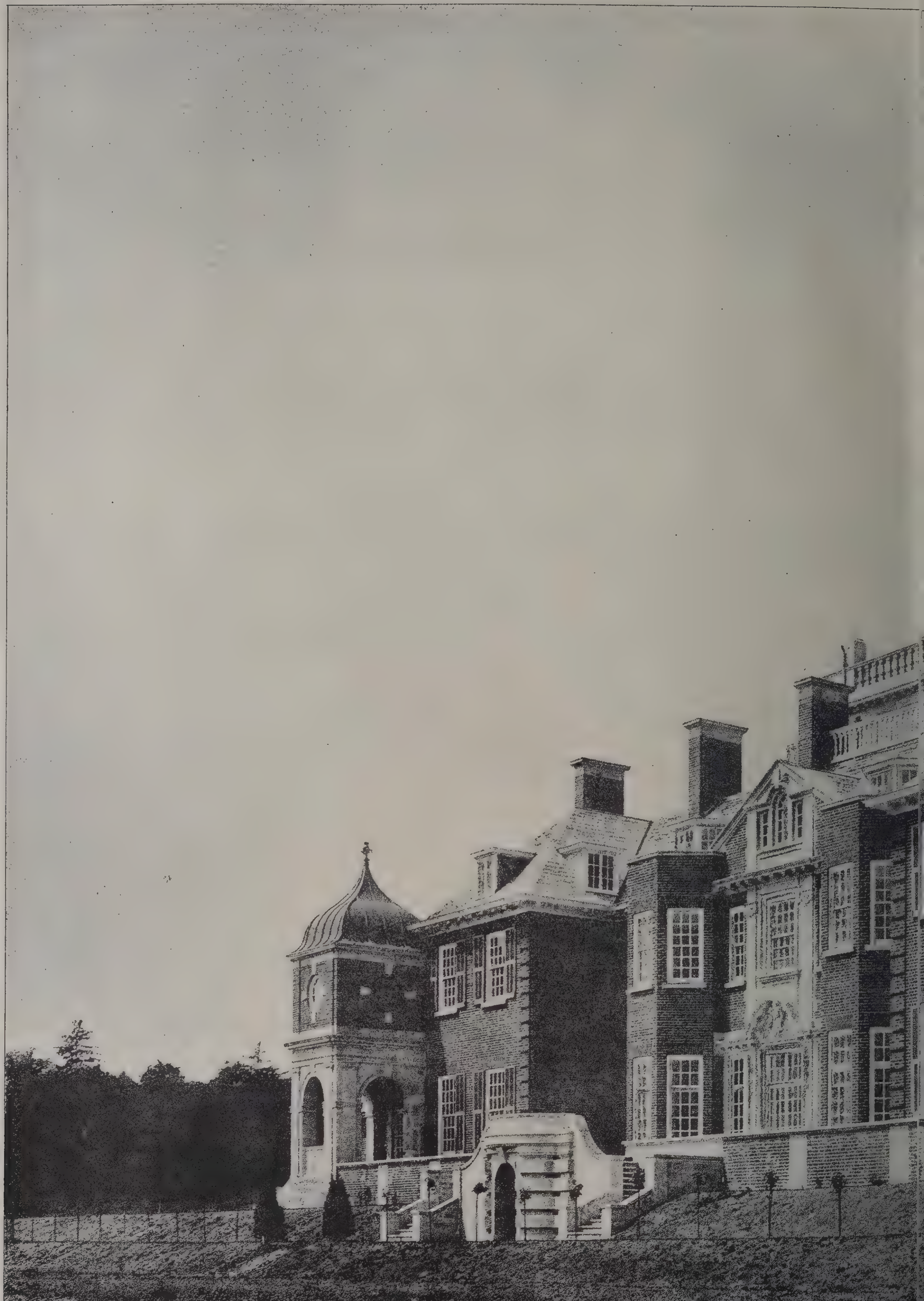

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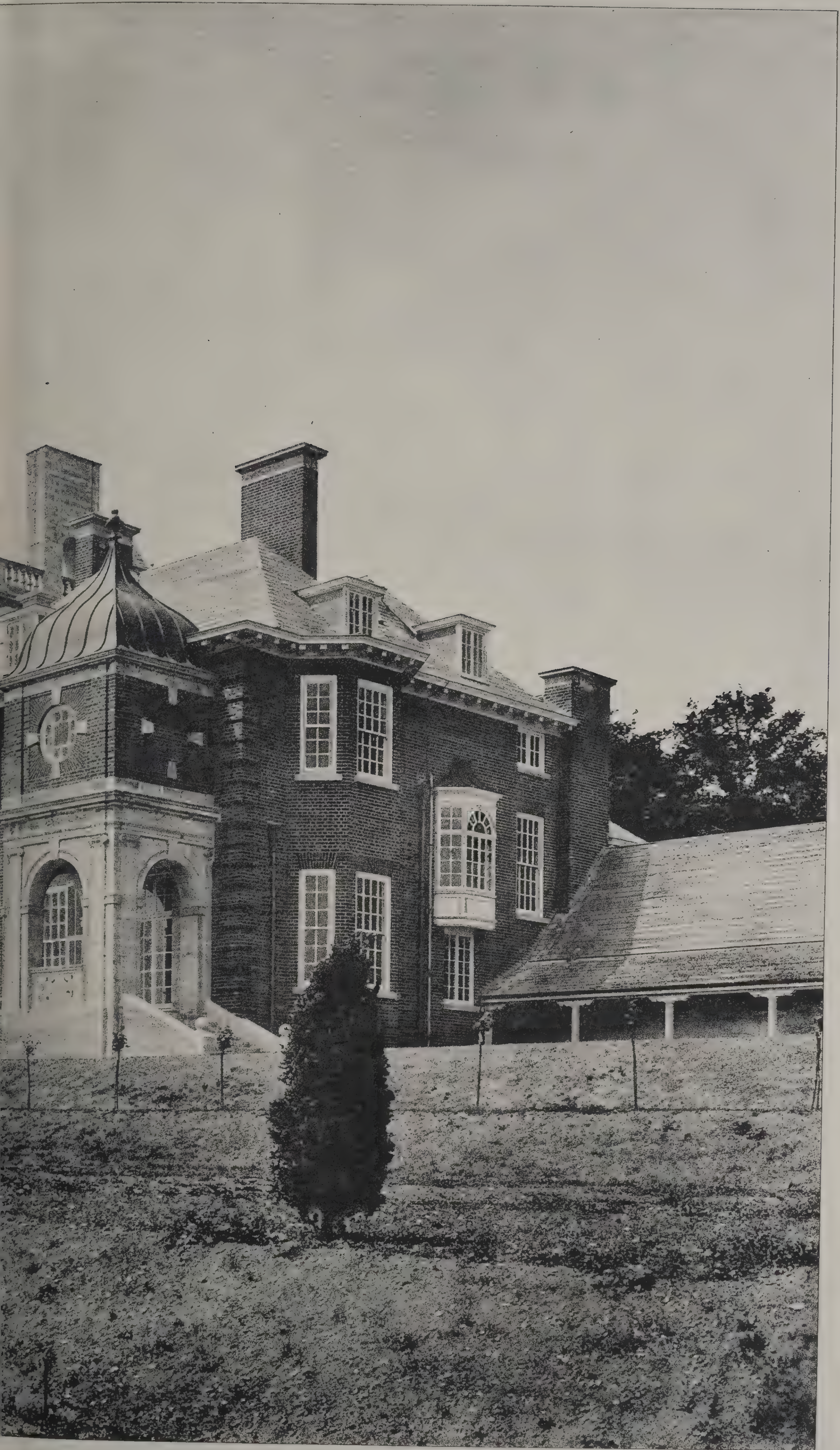

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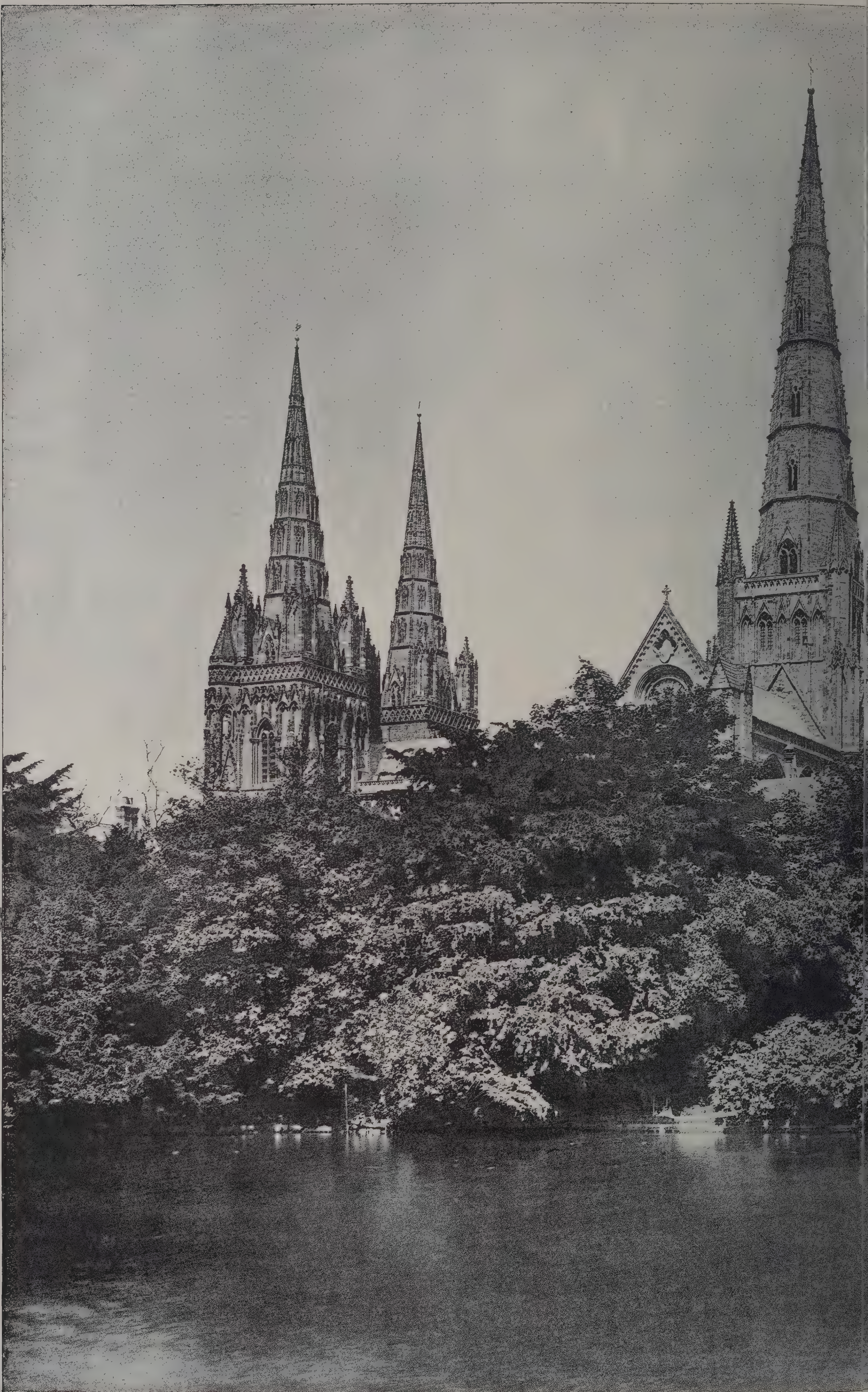
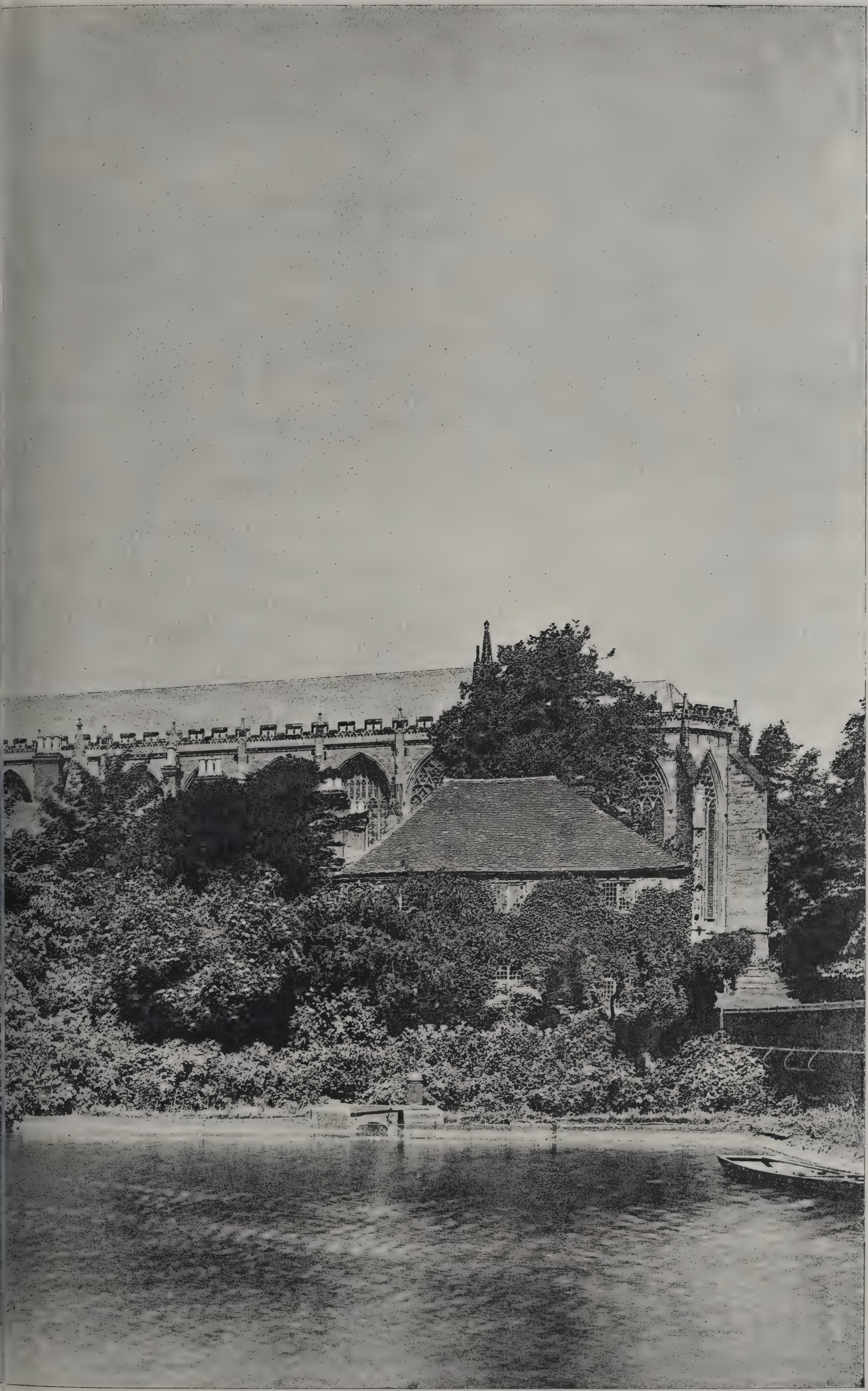


CATHEDRAL SERIES. No. 302.—



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The Architect.

THE WEEK.

The late Marquis of Bute, whose death on Tuesday is to be lamented, was undoubtedly one of the most liberal supporters of architecture in our time. The tower of Cardiff Castle, which was constructed and adorned under the direction of the late William Burges, continues to be unique in this country. In no other work is there so much unity to be found between architecture, painting and sculpture. It was a costly experiment, but the money was well applied. The restoration of Castle Coch was another effort to realise Mediæval arrangements, and as an object-lesson it has much interest. The Marquis of Bute also erected a stately residence at Mount Stuart, in Rothesay, from the designs of Dr. Rowand Anderson. He was munificent in his donations for the erection of churches in Scotland and Wales. The Universities of Glasgow and St. Andrews are also indebted to him. His interest in architecture was not confined to the bestowal of money for the erection of buildings. Although he could be considered an advanced man of business and a promoter of works of enterprise on the grandest scale, much of his attention was devoted to the past, and especially to the history of Christianity in times which have received little notice from Church historians. As part of his studies of the subject he spent a long time in copying the inscriptions which remained in the old Greek churches, records which he was eager to have published in *The Architect*. At a later time he undertook a translation of the "Breviarum Romanum," and he was what might be called a scientific critic of ecclesiastical ceremonies. As he had only reached his fifty-fourth year, those who knew the Marquis anticipated that he would have aided architectural developments in several forms. From his height and healthful appearance he could be considered as a man that was destined to live for many years and to render services to the art as long as he was in the world. All those expectations have now vanished, and although the Marquis of Bute has left memorials of his appreciation of art in several forms, the conviction cannot be overcome that he never rendered full justice to the ability with which he was endowed or to the delight he experienced from architectural works.

On Tuesday there was a preliminary meeting of the Architectural Association's School of Design. Mr. Beresford Pite read what was evidently a part of a treatise relating to materials. He recommended the students to regard it a duty to obtain practical acquaintance with all materials they were likely to use in their buildings, as a means to produce not only sound but ingenious construction. It was explained that materials could possess an æsthetic element as well as one of endurance and strength. The character of the remarks must have whetted the curiosity of all present, and Mr. Seth Smith expressed the general feeling when he said it was desirable to read Mr. Pite's remarks in print. Mr. Aston Webb avoided all formality by giving a *causerie*. He did not consider that the study of materials was sufficient for the students. He advised them to be constantly handling the T-square, and to seek above all things alertness of mind by observing how easily changes of effect could be obtained by occasional alterations. As more expressive of their aims, he suggested that the word "design" should be generally substituted for the word "drawing." Sketching, although excellent if done with judgment, could become, he said, dangerous, for there was no need to follow every detail of an old building unaltered. In fact, it was well for students to know the limitations of all draughtsmanship. Solids could not be represented on paper without some conventionalisms, and in most things there had to be sacrifices which were important. Specifications to some extent compensated for the shortcomings of the plan. Before designing, the position of the site should be well considered, and repose should be one of their first aims. Optical effect was another subject which demanded attention, for it sometimes happened that what looked well on paper was disappointing when constructed. At the present time there was a talk about an alliance of architecture with the other arts. Mr. Aston Webb said it should never be forgotten that architecture had an independent power of expression, and to achieve it was the glory of the architect, although it might be his greatest difficulty. The two addresses, if unlike in character, were adapted to convince the members of the advantages they can possess by joining the class of design and taking an active share in the exercises.

At the last meeting of the Brighton Town Council the Aquarium committee reported that Mr. A. Hessell Tiltman had accepted the offer to prepare a report as to the appropriation of the Aquarium site. Mr. Tiltman suggested that if suitable plans could not be obtained the surveyor should at once prepare plans of the premises; also that the committee or a deputation should visit Blackpool to see the Winter Gardens, &c., there. The surveyor was instructed to prepare the plans required by Mr. Tiltman. It was resolved that the members of the committee, accompanied by Mr. May, the surveyor, should visit the Winter Gardens at Blackpool, Buxton, Harrogate and Scarborough. The Town Clerk submitted a draft agreement with the Aquarium Company with reference to the purchase of the Aquarium by the Corporation, and it was resolved that the committee agree to the condition required by the vendors providing for the payment of the sum of 500*l*. to the liquidators as liquidated damages in the event of the failure of the Corporation to promote the Bill in accordance with the terms of the agreement; also that the committee do not agree to the provision empowering the liquidators to rescind the agreement for purchase in the event of Parliament altering the terms of the agreement to the prejudice of the liquidators.

During several weeks the Rev. W. Iago, of Bodmin, has been conducting explorations in the ancient cemetery at Harlyn Bay, near Padstow. Inconvenience was caused by the severe gales, but the most pressing difficulty is the want of funds. There is no doubt something should be done to preserve so valuable a prehistoric monument. The antiquities found may not be numerous, but among them are bracelets of stone and metal, rings, a bead necklace and two bronze brooches of elegant form. Sir John Evans has informed Mr. Iago that he has never seen any brooches of exactly the same form. They are allied to a class of brooches found in the north of France. They are very interesting. There is a good deal of Celtic feeling in their form. They may be of earlier date than those from the north-west of France, supposed to be of late Roman date. Professor Schmidt, of Copenhagen, describes the Harlyn fibulæ as "of La Tene form, making the graves British and probably contemporary with the earliest Roman period in Britain." In the British Museum there are no such fibulæ. Dr. John Beddoe, F.R.S., the eminent anthropologist and craniologist, writes of the Harlyn Bay ancient cemetery, "I do not think there is one equal to it, at once in magnitude and earliness, in Britain." The work is conducted with strict economy, and merits the support of English archæologists.

The Copenhagen brewer, M. Karl Jacobsen, is not satisfied with endowing the city with examples of sculpture which he has commissioned from modern Danish artists He has used his influence with the King of Greece to obtain a large number of casts of ancient examples for the Copenhagen Museum. King George does not forget he is a Dane, and there could not have been much difficulty in persuading him to send works of which the forms are unknown in the greater part of Western Europe. Among them are the Themis from Rhamnus, the Poseidon from Melos, the Apollo from Melos, the Aphrodite from Epidauros, the Hermes from Andros, a collection of antique busts from Bœtia and Epidauros, the Demeter from Lysokura, three reliefs by Praxiteles from Mantinea, an unnamed figure from Delos, with twenty-two selected monumental reliefs from various places in Greece, all of much interest. When one set of casts is produced the difficulty of obtaining others is diminished. It would be an advantage to possess similar casts in London, but in what gallery would they be acceptable?

THE ARCHITECT'S CERTIFICATE IN BANKRUPTCY CASES.

BUILDERS' failures are common at the present time. Fortunately the majority of them are on a small scale. In the reports of the proceedings and the statements of affairs which are issued, it is not unusual to find that a working man with little or no capital and with a knowledge only of his own trade, or it may be a clerk in a builder's office who is without knowledge of any trade, starts in business in the expectation that Fortune, who is always supposed to admire courage, will favour him and lead him to prosperity. In many of the cases it is hard to say which is the more amazing, the temerity of the adventurers or the liberality of the creditors who supply materials without substantial security. Builders' failures of a certain class are so often recorded, they cease to have any general or public interest, for in a legal or commercial sense what is true of one case becomes true of all.

We are, however, about to refer to one of those ordinary cases which was heard in the South of England a few days ago. It was not a startling affair which would cause consternation among men of business. The liabilities expected to rank for dividend were returned at 927*l*., and the total deficiency of the assets was only 395*l*. Losses on contracts were put down as the sole causes of the insolvency. The debtor was thirteen years in business; most of his work came to him as a jobbing mason, but latterly he undertook contracts. The assets were returned at 531*l*., but about 300*l*. of that sum was represented by a claim on the Corporation of the town, and they declare their debt is only 100*l*. It will be evident from what we have said that the relations between the debtor and his creditors, if considered alone, are of no importance except to those who happen to be acquainted with the parties.

The official receiver at the first meeting, however, uttered some remarks which, in our opinion, have transformed the case, for practically he attacked the usual procedure of architects when arranging contracts. The debtor in answer to some questions attributed his failure to the fact that he was unable to obtain a final certificate from an architect. The official receiver responded by saying that if contractors will put themselves into architects' hands in the way described, they must accept the consequences. It appears that the clause in the deed which excited official sympathy was the ordinary one, viz. that the architect was to be the sole arbitrator in case of dispute, and his decision was to be final. The debtor had entered into a contract for works in connection with a new cattle market. Owing to objections from the owners of land adjoining the contemplated site, it was necessary to put the boundary lines back for about 8 feet. The contractor claimed 150*l*. as an extra on account of additional excavation. The Corporation, acting no doubt on the advice of the architect, declined to pay that sum, on the ground that the alteration of position did not affect the extent or character of the work. The official receiver described the contract as one-sided, and to that fact must be attributed, he said, the failure of the contractor. On one of the creditors suggesting that a representation should be made to the Corporation, the receiver said that if what had been stated was correct the Corporation must have acted unjustly, and expressed astonishment that a public body should treat a contractor in such a manner after he was compelled to incur heavy expenditure through no fault of his own.

It is true that at a second hearing, and after an interval of a week, another aspect was given to the case. The town clerk sent a letter to the official receiver in which he repudiated the assertion that the Corporation had unfairly treated the debtor. The architect also wrote to the same effect. The lawyer who represented the debtor desired to suggest that too much was made of the allegation of unfairness. Under the circumstances we consider the official receiver should have acknowledged that he was led away by a one-sided statement, and should have treated the debtor in the manner deserved. But instead of that course, he resolved that there should be another examination at which the Corporation could be present. But why should it be necessary to put a public body and an architect to the trouble and expense of refuting a baseless charge? The debtor's lawyer tried to have a last word by saying that if his client had not received unfair treatment he had undertaken an unprofitable contract. Surely it is not the business of corporations or other building owners or their architects to warn intending contractors about the risks they incur by undertaking to do work at less than its value? In law every man is supposed to be the best judge of the system by which his business is to be conducted, and everyday experience proves that a contract which one man would make profitable would be turned into a loss by another contractor. The architect's final certificate is one precaution against bad management, and as such its importance should be recognised by all official receivers.

It is evident from the remarks that official receivers, although they hold a judicial office, are not always thoroughly familiar with the law of building. When it is said that an architect is to be sole judge in a case which affects himself, a sympathetic hearer may consider that justice is not likely to be served by the arrangement. But if it were known that the architect cannot derive any advantage by any act in his judicial capacity, such as withholding his final certificate, it would then be reasonable to hesitate before declaring that his delay was unjust. It should likewise be remembered that although the architect is to a large extent acting as a judge, yet if a builder considers the architect's conduct is not as impartial as a judge's should be, and alleges he has suffered loss, he can bring an action against his employer, the building owner, for any loss he has sustained. The anomaly of the architect's position in such a case is sometimes likely to excite prejudice. An architect can be regarded not only as a judge but as an absolute judge, who is not obliged to give reasons for his decisions. But while he is wielding power in that way he does not cease to be an ordinary agent who is involving his principal in liabilities and damages by the least departure from abstract principles of right. The decision in Pawley *v.* Turnbull, which arose out of differences over certificates, will suggest the risks incurred through the conduct of an architect, and also prove that a contractor because he is in an architect's hands is not deprived of relief. The Court said:—"It appearing from the evidence that the defendant Hay (the architect) acted improperly and unfairly in the exercise of the powers conferred upon him by the contract in the pleadings mentioned, declare that the plaintiff is entitled to recover from the defendant Turnbull (the employer) the full amount of 2,590*l*., the contract price, and the sum of 190*l*. for extra work."

We suppose the official receiver in the case which we have under consideration would prefer that disputes in contracts should be referred to an independent arbitrator. But what guarantee is there that an arbitrator's decision, or let us say an arbitrator's certificate, can have any more finality about it than one by an architect? The Courts can be invited to set aside whatever is done by an arbitrator, and a costly course of litigation may have to be gone through. By leaving the decision to the architect it has been found that long, tedious and expensive delays in settling the accounts between builders and building owners have been avoided, and while economy in various forms is insured, the architect's certificate will not be easily set aside.

No doubt it is found that a builder who is a thoroughly honest man fails occasionally to make a contract profitable, and incurs losses which he may not be able to meet. But that result may have been inevitable. Contracts are often taken at too low a price, incompetent foremen and workmen are employed, capital is borrowed at high interest, and various other causes could be mentioned to explain the failure. It surely is not the office of the architect to guide a contractor through an onerous undertaking, and explain to him all the mysteries of finance and workshop management. The architect does not accept duties of that kind, and he is not to be blamed if losses arise instead of profits. What he has to do is to see that both parties to a contract carry out the conditions faithfully, and in that way he becomes the guardian of the contractor's interests as well as his client's.

The clause in the conditions by which the architect becomes sole arbitrator is the simplest and most effective way for realising the terms of a contract deed. All parties are placed on an equal footing. The ignorance of a client about building matters is compensated by the skill and experience of an expert, and the builder has therefore the advantage of escaping the numerous annoyances which arise when in a complicated business one party constantly apprehends he is cheated. The most ignorant or suspicious building owner, when he pays money to a contractor, can be considered as fulfilling his undertaking, but it is also necessary that the builder should discharge his obligations by supplying work of the character that was arranged for, and it is the architect's duty to determine that character. The arrangement is simple, and we cannot see with what reason a builder, an official receiver or a judge can disapprove of a principle which promotes honesty in dealings. It may seem very hard that a builder should have to deal with an expert instead of with a committee or corporation composed of men who have never used a trowel or a plane, but when they prefer to be represented by an architect and the builder unhesitatingly accepts the arrangement, it seems strange that the architect should be blamed because he is faithful to his trust.

It also happens very often that the same deficiency which makes builders when tendering underrate the difficulties or cost of work induces them to set an exaggerated value on the work they have executed. We do not say there is always dishonesty in the endeavour to obtain a disproportionate price for work. Some men live in a constant muddle, and never acquire that precision of judgment which is necessary in determining the ratio between cost and profit, which is one of the qualities of a successful contractor. In contracts as in other struggles there must be occasional defeats, but those who carry them out have not always the courage to own when they have lost through their own mismanagement, and they endeavour to cast all the blame on the architect who happens to be the arbiter. It does not serve the cause of business in the right sense of the word when officials who act in the public interest profess sympathy for builders in such cases. It would be far more useful to the country to probe the affair until the true cause of the failure is discovered, and then to publicly condemn the mismanagement which in most cases brings men into the bankruptcy courts.

ROUSSEAU AND BUILDING.

We referred in our last number to the statement of M. Guadet about the influence of Jean Jacques Rousseau on French architecture. The impassioned writer will always be more or less of a reality to Frenchmen, and it is therefore natural that they should see evidence of his power in whatever has interest for them. We can admit with Byron, that

> from him came,
> As from the Pythian mystic cave of yore,
> Those oracles which set the world in flame,
> Nor ceased to burn till kingdoms were no more.

All the great actors in the first French Revolution were to some extent inspired by Rousseau's writings, and indirectly he may, therefore, have had some share in the productions of David, Soufflot, Gabriel, Percier and others. But it could not be said that any of Rousseau's writings related to architecture, painting or sculpture. Unfortunately, the character of his mind did not admit of an appreciation of the fine arts. He was in his prime when he competed for a prize offered by the Academy of Dijon by composing an essay in which he maintained, with his usual eloquent earnestness, that the progress of arts and sciences had been unfavourable to the true interests of men.

For music he had some aptitude; he composed a great many French romances in the style of the eighteenth century; he compiled a small dictionary explanatory of musical terms, and for a time his only income was derived from copying music. His writings can often be described as musical, for instinctively he was aware of the fact that prose cannot be considered perfect unless it has rhythm which approaches melody. But Rousseau had to own that, although endowed with tuneful gifts, it was with the greatest difficulty he was able to read a page of music.

According to Rousseau there is a rigid law which determines the character of buildings in Europe and which corresponds with what prescribes the fashions of garments. In climates where the changes of the seasons are prompt and violent, raiment is of the simplest. In some places where people dress merely to express their dignity, clothes of all kinds, he says, are a luxury. At Naples people were to be seen in vests "all clinquant, all in gold," but without stockings. It is the same in buildings, adds Rousseau. The utmost magnificence is given where there is nothing to fear about deterioration from the air. In Paris and in London people desire to live in warmth and commodiously. In Madrid there are superb salons, but none of the windows will close, and one has to sleep in the nests of rats. From what he says it is easy to infer that Rousseau would have the character of the architectural style of a country dictated by the average condition of the atmosphere. Instead, therefore, of advocating the introduction of Roman buildings, as M. Guadet would have us believe, Rousseau was bound by his own interpretation of the laws of nature to declare that what was suitable to Rome was out of place at Paris.

If Rousseau cared little about architecture as an art it must be allowed that he attached importance to provisions by which the dangers of buildings as habitations would be diminished. Modern sanitarians could often discover in his books many statements which deserve to be taken as indications of a strong desire to see work like theirs accomplished. He was bold enough to say that men were not created to live as crowds in cities and towns. In proportion as they formed themselves into such assemblies the more they corrupted each other. All the infirmities of the body and all the vices of the soul were, according to Rousseau, only the inevitable effect of communities having too many members. Man is of all animals, he said, the least adapted to live in troops, for the breath of man is mortal to his fellow-man. Cities he considered to be gulfs for the destruction of the human species. In them after a few generations the spirit degenerates or perishes, and it is only by obtaining supplies from the country the continuance of humanity can be secured. Rousseau believed in the virtues of the savage state, or rather he thought, as many men have done in our time, that a new Arcadia can be created if superior men will not be too vain or too refined to become agricultural labourers. In other words, Rousseau could not realise that almost in spite of itself the human race has to take part in an evolutionary scheme, and there is little use in looking backwards for the age of gold.

A writer who was discontented with everyday life to a morbid extent was not likely to be enthusiastic about the erection of noble churches and gateways and other structures in cities. Like Carlyle, he preferred "the Cathedral of Immensity" to the greatest temple erected by human hands. We cannot therefore understand the grounds on which M. Guadet built up his argument about the influence of Rousseau on architecture. But Rousseau's demonstrations of the necessity of surrounding children with whatever was efficacious for their health might be taken as warranting his right to be considered as one of the pioneers of sanitation.

If indifferent to their architecture, he was an enthusiast about the superiority of the ancient Greeks and Romans. His father was only a watchmaker living in Geneva, but he possessed some books which exerted more influence over the fate of his son than was to be derived from classical studies or long courses of translating in any ordinary university of the time. The reading of Plutarch, as he tells us, formed within him a free and republican spirit, a character that was indomitable and impatient of servitude in all forms. When he studied the lives of the Greeks and Romans he ceased to be a child in Geneva, for he was transformed into the great men of whom he read, and he not merely related from memory the stories of their careers to his family, but rendered the scenes with dramatic action. One day when describing the heroism of Mutius Scævola he horrified all present by attempting an illustration of the famous action in the tent of Porsena, for he made an effort to thrust his hand into a chafing-dish. Frenchmen, when they read Rousseau's description of the way in which his character was formed, could not fail to have their belief strengthened that they were the descendants of the illustrious citizens of the Roman Republic, and the introduction of Roman buildings into Paris was in consequence rendered more easy. It must be admitted that the young Rousseau was not made more moral by his studies of Plutarch. He was not long an apprentice before he ceased to remember there were ancient Romans, and he afterwards made the humiliating confession that "jamais César si précoce ne devint si promptement Laridon."

The best proof of the indifference of Rousseau to architecture is his neglect to record any impression which a building made upon him. A man so wayward could hardly fail to be a wanderer, and he travelled over a large part of Europe, between Venice and Chiswick. It is, however, impossible to discover whether the public and private buildings pleased him by their appearance or excited his indignation by their defects. He tells us that on his first arrival at Turin the fumes of ambition ascended to his brain, and he was filled with hopes of one day occupying a position in the city which would be worthy of his ability. He used to speak with fervour about the advantages of travelling on foot through Italy with congenial companions, but his contemporaries regarded what he said as the rhapsodies of an inspired lunatic, and all declined the risks of accompanying him. Indeed, it must have been difficult to realise the advantages of visiting a strange place with so extraordinary a guide. Rousseau has not the slightest power to express local characteristics or local colouring. There is no background to throw out his figures. He writes about Venice at much length, but there might not have been a grand building or a grand picture in the city. When he first came to Paris he was as unmoved by what he saw around him as if his eyes were closed. What makes the absence of accessories more remarkable is that he is never tired of describing worthless characters with whom he had adventures. We do not presume to say that Rousseau was in error. Ordinary rules of rhetorical composition are not applicable to a man who was proclaiming a revolt against laws and customs which had become sanctified by time. But we believe an erroneous notion is given of architecture when a gentleman in M. Guadet's position declares that Rousseau was a factor in the determination of the French style of building.

It is easier to understand how oppressive great buildings must have been to him when we read about his experience of the salons of some of the grandees of the time. There were aristocrats who considered it was amusing to have the advanced spirits of the age in their mansions, for on the stage there could be no comedy which reflected the weakness of human nature more truly than what was to be obtained by watching the relations between the philosophers when their jealousy was aroused by the belief that the smiles of fine ladies were not equitably bestowed. The over-sensitive Rousseau always came out worst from these squabbles, and on that account he was coveted. His grief at a slight neglect became tragic. He speaks of everything that was supposed to confer beauty on the palaces of the wealthy as if they were afflictions for the human spirit, and said he would prefer the humblest hut, so long as he could do as he liked, to all that France could then offer in her salons. But about the cherished retreats to which he fled from time to time, he is generally silent. Some of them still exist and are sought out by pilgrims. They have been so often described and illustrated, it is naturally concluded that Rousseau gave word pictures of them; but that is an error. He was singularly indifferent to form, especially in buildings. What he cared to study were men, and as he said, "Knowing my own heart, I know all men," his study really became a comparison of himself with the people he encountered. The work no doubt had its use, but, *pace* M. Guadet, it was of no account in the promotion of any style of architecture in France or elsewhere.

RUSKIN MEMORIAL.

A MEMORIAL of John Ruskin, for which funds were derived by subscription, was unveiled by Mrs. Arthur Severn on Saturday last at Friars' Crag, Keswick.

The monument consists of a simple monolithic block of Borrowdale stone, rough and unhewn as it came from the quarry. It is of the type of the standing stones of Galloway, which are the earliest Christian monuments of the Celtic people now extant. This form has been chosen as linking Keswick with that land across the Solway whence Ruskin's fore-elders came. Upon one side is incised a simple Chi-Rho, enclosed in a circle, after the fashion of these earliest crosses, with the following inscription beneath from "Deucalion," lecture xii. par. 40:—

"The spirit of God is around you in the air you breathe—His glory in the light you see, and in the fruitfulness of the earth and the joy of His creatures. He has written for you day by day His revelation, and he has granted you day by day your daily bread."

On the other side of the monolith, facing the lake and the scene which Ruskin once described "as one of three most beautiful scenes in Europe," is a medallion in bronze, the careful work of Signor Lucchési, representing Ruskin not as the old man and invalid of later days, but as he was in his prime in the early seventies. The head is a profile; a crown of olive is seen in the background of the panel, which is dished or hollowed to give the profile high relief; and Ruskin's favourite motto, "To-day," is introduced among the olive leaves in the background over the head. Above the portrait is the name "John Ruskin"; beneath are his dates, MDCCCXIX to MDCCCC. Beneath these again is incised the inscription, "The first thing that I remember as an event in life was being taken by my nurse to the brow of Friars' Crag, Derwentwater." The lettering has been designed and drawn by Ruskin's biographer, Mr. Collingwood, and was so designed to indicate that particular dot and dash style of drawing which was a favourite method with the master.

Mrs. Severn said she felt honoured in having been asked to unveil this memorial to her beloved cousin, John Ruskin, at a spot where, as they all knew, was created in his mind an enthusiasm for nature that lasted to the end of his life. Only a few weeks before he left us she read to him Edna Lyall's "Hope the Hermit," which brought back vividly the scenes surrounding them now which he loved so dearly in childhood. It was also in Keswick that his delight in mineralogy began, and that the first specimens of his collection were collected. In middle life, as he was so well and appropriately represented in the beautiful medallion, he came again to that district and wrote letters daily to his mother, and which were rapturous in admiration of Derwentwater. This interesting monument she trusted would help to keep his memory dear in the hearts of all whom he taught to see what was beautiful in nature and good in their lives.

Canon Rawnsley delivered an address upon Ruskin's teaching and his connection with the Keswick part of the Lake Country, and described the motive of the monument and meaning of it.

AN ENGLISH ACADEMY IN ROME.

IT is not generally known that from time to time attempts were made to establish an academy in Rome for English artists. But as official sanction and Government support were generally absent the duration of the experiments was too brief to establish their utility. Of one of the efforts the following account was given by a member:—

When I first came to Rome in the winter of 1820 no English academy of any sort existed. Myself and the other few English students were, if we desired to draw from the living model, constrained to attend one of the crowded Italian schools, or to have recourse to the French academy at Villa Medici. At length, animated by a spirit of independence, a few of us determined to use our utmost exertions to found an English academy, which, however small and poor compared with the magnificent schools of France and Italy, should at least relieve us from the oppressive idea of owing any part of our education as artists to the liberality of foreigners, and more particularly to the French, who cherished against us at that time all the smothered resentment of a baffled enemy. The idea of drawing in a French school was intolerable to me. Yet this feeling, though it found an echo in the breasts of my brother artists, at least of such as did not believe in the absolute impossibility of creating such an institution as I proposed, was so little responded to on the part of the English residents, or I should rather say the English visitors at Rome, that I encountered the greatest difficulty in procuring attention to our scheme, or inducing them to contribute any sum, however small, to the erection of an independent National Academy. In the midst of this apathy on the part of our wealthier countrymen we determined to carry our designs into effect by means of a private subscription among ourselves. We did so, and I am happy to be able to state that as soon as our academy opened no English artist any longer continued his humiliating dependence as an interloper in foreign schools. In the following year (1822) Mr. Hamilton, the English minister at Naples, approving of the spirit which had animated the English artists, and no doubt regarding the establishment of a national academy at Rome as an important step in the progress of British art, made us an offer of 100*l.* The gradual formation of a fund for the maintenance of a durable institution had been all along the main feature of our scheme; but few of us being fixed residents in Rome, the mode of disposing of such contributions as we might receive for this purpose, and managing the interests of the Academy in such a way as to render it a permanently useful institution, demanded more experience in such matters than most of us could be expected to possess, and imposed a greater responsibility than most of us were willing to incur. We therefore wrote to Sir Thomas Lawrence, informing him of our plan and its prospects, of Mr. Hamilton's generous offer, and soliciting through him the advice and sanction of the Royal Academy before accepting such contributions. The Royal Academy approved the scheme and contributed 50*l.*, the President generously adding 50*l.* from his private purse, for the purpose of carrying it into effect. In the meantime our plan was furthered by liberal donations from several distinguished individuals. Finally George IV. was pleased to crown our endeavours by his patronage and assistance.

The condition upon which these various contributions were given being the formation of a permanent school for drawing from the living figure, we were obliged to restrict the expenditure of the Academy to the interest of the money received. From this restriction, no doubt, not only salutary, but essential to the establishment of a lasting institution, we suffered all the inconvenience of an ill-adapted and confined place for the prosecution of our studies, and even that from the shortness of our funds we were obliged to keep closed during half the year. This, I am sorry to say, is still the case, either from apathy in the English visitors at Rome to the progress of their countrymen in the arts, or from a pause in the exertions of the students to obtain for their Academy the notice it deserves from such as could afford them valuable assistance. For the latter circumstance it may be considered some apology that there is considerable difficulty in soliciting subscriptions from distinguished and wealthy persons, without placing the students who undertake this duty in a light calculated to wound their sensibilities, namely, that of being considered petitioners for their own private and personal advantage while they are advocating the interests of an institution likely to be attended with considerable benefit to British art in general, and the advantages of which having reaped in a confined degree themselves, they desire to transmit in a more enlarged and liberal form to succeeding generations. From this natural reluctance to put on the appearance of solicitation the affairs of the Academy have remained in an obscurity from which it should be the first object of its well-wishers to withdraw it. In fact, to set the matter in its true point of view, this school ought, under proper encouragement and more prosperous circumstances, to prove a powerful auxiliary to the public institutions in England for the advancement of the arts, and no doubt in this light it was regarded by the Royal Academy and British Institution when those bodies were pleased to signify by donations their approval and desire to extend its utility. Based upon the broadest, the most liberal and non-exclusive principles, its great object is to aid and direct the English artist in a certain stage of his progress. This institution should therefore be regarded as a main branch of the national means for the education of artists, and as such fostered and maintained not only by all Englishmen who have the character of their country at heart as a civilised and refined nation, but by the Government itself. Another reason, I imagine, for the present state of neglect, in which the Academy languishes, is the consignment of its interests into the hands of the elder and more distinguished artists. These having finished their academical studies, retired more or less out of the sphere of the (junior) students, and absorbed naturally by the works they are commissioned to execute, can scarcely be expected to possess leisure enough to bestow that attention or interest upon the affairs of the Academy, which the successful rearing of an infant institution so imperatively demands. In fact, I suspect it will only be by transferring the management to the hands of the young men, who constantly attend the school, that we shall rescue ourselves from the state of oblivion to which our poor Academy is gradually becoming a prey.

A visitor to the English Academy just described gave the following account of his experiences. We passed down a long dark narrow street, terminating in one of those small open spaces that are usually designated in Rome by the name of Immondazzaio, namely, a spot for the accumulation of the daily and nightly *immunditia*. Proceeding towards a large sort of barn door, which opened from the front of what seemed some ancient small church upon this little immured square, which was partially illuminated by the light which streamed from a large window above, my companion lifted the latch of a small wicket which opened in the door, and the opening was accompanied, as it is sometimes in shops and taverns, to avoid the inconvenience of customers eloping without depositing their scot, by the jangling of a little bell. A screen of wood fronted us, above which the lofty and smoke-blackened roof of the main body of the edifice, illuminated obscurely, apparently by lamps which were hidden from us behind the screen, dimly loomed. The meagre inquiring face of the old servant of the Academy, as it seemed, peeped out from a small side door, which led to a closet on the right, sacred, as I afterwards found, to the unfinished drawings of those students who cared not to convey home to their portfolios those abortive productions. Nails, also tacks, provided by the funds of the Academy for such as preferred still to movable paper on their boards, were forthcoming from this limbo; and sometimes there also might be found bits of spare charcoal or chalk, or perchance an unknown portcrayon, to equip the student unfurnished through forgetfulness with the implements of his craft, or the adventurous amateur ambitious of taking a seat among the artists and trying his hand at the model.

The drawing-room seemed the interior of some dismantled church, and still a half-ruined stucco-angel that, unlike the arch-fiend, "had lost all his original brightness," might be seen dimly fluttering aloft, attempting, as it were, like some forlorn barn-haunting owl, to establish a precarious perch on the narrow architrave of the arch of the roof, now literally lamp-black.

Below, on the left, behind a forest of unengaged easels, standing thick as ship-masts in a harbour, glimmered in plaster the sublime bulk of the Vatican Torso, like a huge moon rising dimly between the trunks of trees—on the right, from amid heaps of rubbish, stools, umbrellas, &c., arose, stately as the cedar from among tangled underwood, the long stark limbs of the Belvedere Apollo. Farther, on one side of the spot which was once occupied by the high altar of the Maronites, stood, raised to a proper elevation, a plaster gentleman without his skin, one arm extended, very kindly demonstrating his own muscles for the benefit of the company; on the other, a human skeleton, hitched up by the neck, "grinned horrible."

In front between these two figures where the high altar itself once stood, an intense lamp-light fell on the dazzling flesh of the naked model, driving in heroic attitude an imaginary pair of steeds with an imaginary whip in his lifted right hand, imaginary reins in his left and standing in an imaginary biga. His whip was a sort of halter contrived to support his arm during the two hours of his toil at that painful elevation, his reins other cords fastened to some fixed object before him and his imaginary biga a log of wood, on which the right foot was planted to give the necessary inclination to his position. Notwithstanding the rude nature of these accessories, a more glorious form I think I never beheld, and I doubt whether finer limbs ever figured in the Olympian Circus on real biga or quadriga. He was a young fellow from Sonnino I think they said, a savage little town, famous for breeding banditti, nested in the Volscian mountains above Terracina. A Sonnino Alcibiades tearing along in a visionary chariot round the little church of the Maronites. A large red cloth suspended behind the stage on which the heroic model or the model-hero was elevated threw a glow into the shadows of his flesh, which reminded you of the brilliant reflections in Rubens's and Reynolds's naked figures. A stove was placed a little behind the model on the right, tended by a lad, who divided his attention between the fire and the lamps. Between us and the shining central object—the model I have described—were visible a row of dark heads, some capped, some bare, or rather furnished with a profusion of wild Medusa-like locks, each accompanied by a shade-lamp on the left, in perpetual motion, glancing up and down from the model to certain boards before them, supported against a desk which ran across the room. These, it was not difficult on a nearer inspection to perceive, belonged to the students of the Academy, who were very busily and silently engaged in tracing upon papers of drab and blue tints a charcoal outline of the figure before them. These gentlemen, I found, were divided into two ranks, one before the other, the front rank with their feet on the ground, the other raised theatre-wise behind. One, indeed, detached from the rest, had set up his easel in a gloomy corner behind the second rank, and apparently looking forward with some impatience to the more fascinating occupation of colouring, no doubt viewed the necessity of making an outline previously as a burdensome obligation.

Really, there can be few more melancholy spectacles, I imagine, to the eyes of a finished artist than the various attempts at expressing the model by the less gifted members of an academy. And if anything could visibly demonstrate the necessity of encouraging a school for drawing from life, of keeping it up and affording it assistance, it would be the lamentable deficiency in the power of design, which the inspection of the studies at an academy discovers in the majority of the students, and, what is an important consideration, of students by no means destitute of talent, but simply unpractised in drawing from the naked figure, the difficulties of which are so discouraging, and in which ultimate success has been attained by so few, and which yet is so essential to all figure painters that a man who undertakes such a task with any chance of succeeding in it requires and deserves all the assistance possible.

While this reflection passed through my mind, I could not help regretting the uneasy, uncomfortable, gloomy, ill-arranged, crowded look of the place before me, the necessary consequence of contracted funds; and I thought if I were a student how much discipline, how much constraint, I should have to exercise before I could drag myself nightly to such an untempting-looking locality to undertake a performance beset with so much difficulty.

While I was absorbed in these reflections, suddenly, at a signal from a neighbouring church clock, which was preceded and accompanied by the pulling out of a watch here and there, and inquiries from this and that student whether the first hour was up, the model removed his cramped foot from the log of wood which represented his biga, unhitched his galled right hand from the noose in which it hung, and let drop his reins, and, stretching his strained limbs, proceeded to extinguish the lamp under which he stood. He then descended from his stage, and crouched himself by the stove, looking in his new position, as I thought, more picturesque and classical than ever. Most of the young artists extricated themselves from their seats on the forms, not, however, in some cases, without an effort; some few remained shading up their backgrounds, and rubbing their stumps to and fro with much energy, not unaccompanied with noise. The dismounted formed into little knots and groups discussing various topics. A quarter of an hour was allowed the model to repose himself, after which he rose, reascended his stage, lit the lamp, and assumed his old posture, while the students got somehow into their places again. I forgot, by the way, to mention one interesting fact, which is that this same little ci-devant church of the Maronites was once Flaxman's studio.

MEMORIAL TABLETS.

THE following is a complete list of the memorial tablets which have been erected by the Society of Arts on houses in London associated with distinguished men and women :—

Joanna Baillie, Bolton House, Windmill Hill, Hampstead; James Barry, 36 Castle Street, Oxford Street; Elizabeth Barrett Browning, 15 Wimpole Street; Robert Browning, 19 Warwick Crescent, Paddington; Edmund Burke, 37 Gerrard Street, Soho; Lord Byron, 16 Holles Street. [The house was pulled down in 1889. In May, 1900, Messrs. John Lewis & Son, silk mercers, erected on the front of the new house (now in their occupation) a fresh memorial, consisting of a bronze relief bust of Byron placed in an architectural frame of Portland stone.] George Canning, 37 Conduit Street; George Cruikshank, 263 Hampstead Road; Madame D'Arblay (Fanny Burney), 11 Bolton Street, Piccadilly; Charles Dickens, Furnival's Inn. [The whole of Furnival's Inn was pulled down in 1898.] John Dryden, 43 Gerrard Street; Michael Faraday, 2 Blandford Street, Portman Square; John Flaxman, 7 Buckingham Street, Fitzroy Square; Benjamin Franklin, 7 Craven Street, Strand; Thomas Gainsborough, Schomberg House (now part of the War Office), Pall Mall; David Garrick, 5 Adelphi Terrace; Edward Gibbon, 7 Bentinck Street; George Frederick Handel, 25 Brook Street; Sir Rowland Hill, Bertram House, Hampstead; William Hogarth, 30 Leicester Square; John Keats, Lawnbank, Hampstead; Samuel Johnson, 17 Gough Square, Fleet Street; Napoleon III., 3A King Street, St. James's; Lord Nelson, 147 New Bond Street; Sir Isaac Newton, 35 St. Martin's Street; Peter the Great, 15 Buckingham Street, Strand; Sir Joshua Reynolds, 47 Leicester Square; John Ruskin, 54 Hunter Street, Brunswick Square; Richard Brinsley Sheridan, 14 Savile Row; Mrs. Siddons, 17 Upper Baker Street; William Makepeace Thackeray, Kensington Palace Green; John Thurloe, 24 Old Square, Lincoln's Inn; Sir Harry Vane, Belmont, Rosslyn Hill, Hampstead; Sir Robert Walpole, 5 Arlington Street.

The Council of the Society will be glad to receive suggestions from members of the Society or others who know of houses once the residences of celebrated persons, the owners of which would permit the erection of tablets.

THE ANCIENT MONUMENTS ACT.

A CORRESPONDENT of the *Times* points out that the Ancient Monuments Act of Lord Balcarres, which was backed also in the House of Commons by Sir J. Brunner, Mr. Carson, Mr. (now Sir Richard) Jebb, Sir J. Stirling-Maxwell and Mr. Bryce, and was piloted through the House of Lords by Lord Avebury, defines a monument as meaning "any structure, erection or monument of historic or architectural interest," and unless, which is doubtful, the word "ancient" can be read into this definition from the short title, its application is not confined to old ruins. It says that "where the Commissioners of Works are of opinion"—an expression of unrestricted power—"that the preservation of any monument is a matter of public interest by reason of the historic, traditional or artistic interest attaching thereto, they may, at the request of the owner thereof, become the guardians thereof." County councils are also empowered either to purchase or, at the request of the owners, become the guardians of monuments and to maintain them out of county funds. Both the Commissioners of Works and the county councils may receive voluntary contributions towards maintenance and management, and the public are to have access to all monuments of which either the Commissioners of Works or any county council are the owners or guardians, "but, where they are guardians only with the consent of the owner of the monument, at such times and under such regulations as the Commissioners or council shall prescribe." The Act is to be construed as one with the Ancient Monuments Act, 1882, which comprised only "the group of stones known as Stonehenge," and twenty-eight other specified monuments in England, "a group of remains and pillars on a haugh at Clava, on the banks of the Nairn," and twenty others in Scotland, and "the stone monument at Ballyna," and eighteen others in Ireland—with power, however, to the Queen in Council to add to any of the three lists. The wide general terms of the new Act, which does not apply to Ireland, that sister country having already a comprehensive statute of her own in the Ancient Monuments Protection (Ireland) Act 1892, are not a little surprising. There is no exception for ecclesiastical buildings, the only expressed exception being that the Act shall not authorise the Commissioners of Works to become the guardians of any structure which is occupied as a dwelling-place by any person other than a person employed as a caretaker thereof and his family. An incorporated incorporation of the Lands Clauses Act has the effect of enabling tenants for life, corporations and other owners under disability to sell their monuments; and the comprehensive definition of "owners" in the incorporated Act of 1882 includes beyond doubt ecclesiastical owners of every kind, so that it would be hard to say that there is not a technical authority given to effect the sale of Westminster Abbey.

TESSERÆ.

Painting and Poetry.

WHATEVER may be the superiority of painting to the originals from which it is copied, it is still limited in comparison of that which poetry enjoys. The painter addresses himself to the eye. The poet speaks to the imagination. The painter can represent no other qualities of nature but those which we discern by the sense of sight. The poet can blend with those all the qualities which we perceive by means of our other senses. The painter can seize only one moment of existence, and can represent no other qualities of objects than what this single moment affords. The whole history of nature is within the reach of the poet, the varying appearances which its different productions assume in the progress of their growth and decay, and the powerful effects which are produced by the contrast of these different aspects or expressions. The painter can give to the objects of his scenery only the visible and material qualities which are discerned by the eye, and must leave the interpretation of their expression to the imagination of the spectator; but the poet can give direct expression to whatever he describes. All the sublimity and beauty of the moral and intellectual world are at his disposal, and by bestowing on the inanimate objects of his scenery the characters and affections of mind, he can produce at once an expression which every capacity may understand and every heart may feel. Whatever may be the advantage which painting enjoys, from the greater clearness and precision of its images, it is much more than balanced by the unbounded powers which the instrument of language affords to the poet, both in the selection of the objects of his description and in the decision of their expression. It is accordingly by the preservation of unity of character or expression that the excellence of poetical description is determined; and perhaps the superior advantages which the poet enjoys in the choice of his materials renders our demand for its observance more rigid than in any of the other arts of taste. In real nature we willingly accommodate ourselves to the ordinary defects of scenery and accept with gratitude those singular aspects in which some predominant character is tolerably preserved. In the compositions of gardening we make allowances for the narrow limits within which the invention of the artist is confined, and are dissatisfied only when great inconsistencies are retained. Even in painting we are still mindful that it is the objects only of one sense that the artist can represent, and rather lament his restraints than condemn his taste if our minds are not fully impressed with the emotions he studies to raise, or if the different incidents of his composition do not fully accord in the degree as well as in the nature of their expression. But the descriptions of the poet can claim no such indulgence. With the capacity of blending in his composition the objects of every sense, with the past and the future, as well as the present, in his power; above all, with the mighty spell of mind at his command with which he can raise every object that he touches into life and sentiment, we feel that he is unworthy of his art if our imaginations are not satiated with his composition, and if in the chastity, as well as the power of his expression, he has not gratified the demand of our hearts.

Uniformity and Intricacy.

Uniformity is not in every case equally beautiful, and this beauty is in all cases proportioned to the difficulty of its attainment or to the more forcible expression of design or skill. In simple forms, or such as are constituted by lines of one kind, uniformity is beautiful, but in a very small degree. Increase the number of parts and its beauty increases in proportion to their number. We are not much struck with the uniformity of two leaves of a tree. The uniformity of the whole number of leaves is a very beautiful consideration. The uniformity of these minute parts in every individual of the class, in every tree of the same kind in nature, is a consideration of still greater effect, and can scarcely be presented to the mind without awakening a very powerful conviction of wisdom and design. It is upon this principle chiefly that we determine the beauty of mathematical figures, when we consider them simply as figures, without relation either to their connection with science or with any of the productions of art. An equilateral triangle is more beautiful than a scalene or an isosceles, a square than a rhombus, an hexagon than a square, an ellipse than a parabola, a circle than an ellipse, because the number of their uniform parts are greater and their expression of design more complete. In general, in this subject regular figures are more beautiful than irregular, and regular figures of a greater number of parts more beautiful than the same figures of a smaller number of parts; they cease only to be beautiful when the number of their parts is so great as to produce confusion and of consequence to obscure the expression of design. It is the same principle which seems to produce the beauty of intricacy. Nothing is more delightful than in any subject where we at first perceived only confusion to find regularity gradually emerging, and to discover amid the apparent chaos some uniform principle which reconciles the whole. To reduce a number of apparently dissimilar particulars under one general law of resemblance, as it is one of the strongest evidences of the exertion of wisdom and design, so it is also productive of one of the strongest emotions of beauty which design can excite.

The Artist and the Public.

The artist and the public are ever in the strictest reciprocity. If the arts flourished nowhere as in Greece, no other nation ever interested itself with motives so pure in their establishment and progress, or allowed them so ample a compass. As long as their march was marked with such dignity, whilst their union excited admiration, commanded attachment and led the public, they grew, they rose; but when individually to please, the artist attempted to monopolise the interest due to art, to abstract by novelty and to flatter the multitude, ruin followed. To prosper art not only must feel itself free, it ought to reign. If it be domineered over, if it follow the dictate of fashion, or a patron's whims, then is its dissolution at hand. To attain the height of the ancient is impossible for modern art, circumscribed by narrower limits, forced to form itself rapidly and on borrowed principles. Still it owes its origin and support to nearly similar causes. During the fourteenth, and still more in the course of the fifteenth century, so much activity, so general a predilection for art spread themselves over the greater part of Italy, that we are astonished at the farrago of various imagery produced at those periods. The artist and the art were, indeed, considered as little more than craftsmen and a craft; but they were indemnified for the want of honours by the dignity of their employment, by commissions to decorate churches, convents and public buildings.

The Venetian School.

As Titian, by living at Venice, had not the facility of examining ancient works, he could not fundamentally acquire a great style like Michel Angelo; and for that reason he did not bestow on his delineation of forms all that attention which they merited, and applied himself more to the appearance of truth, which depended on the colours of the body, and arrived in that part, by continual exercise of painting and copying nature, to such excellence that he has never been equalled; and what contributed much to this was the vanity of the Venetian gentry, who wished to be painted by him, or to have from his hand those exquisite female figures. Contemporary with Titian, the Duke of Mantua employed Mantegna, who established at Modena the first academy that had been in Italy, from which came Bianchi, the master of Antonio Allegri, named Correggio. From the foundation of the Venetian school a mode of proceeding was adopted which, though well calculated to give the painter a greater promptness of execution, a more commanding dexterity of hand and a more chaste and lively colouring than is to be found in the artists of the Roman or Florentine schools, was also the means of introducing a want of correctness in their compositions and a neglect of purity in their outlines. Their method was to paint everything without the preparation of a drawing, whereas the Roman and Florentine painters never introduced a figure of which they had not studied and prepared a model or cartoon. Following the system of his countrymen, Titian painted immediately from nature; and possessed of a correct eye, attuned to the harmony of effect, he acquired a style of colouring perfectly conformable to truth. Satisfied with this identity of imitation, he was little sensible of the select beauty of form, or the adaptation of that characteristic expression so essential to the higher order of historic painting. In his works of that description, if we look for the fidelity of the historian, he will be found, like other artists of his country, little scrupulous in point of accuracy. He neither presents us with the precise locality of the scene, the strict propriety of the costume, nor the accessories best suited to the subject; attributes so estimable in the works of those painters who consulted the best models of antiquity.

Editions of Vitruvius.

The Marquis Poleni, in his "Exercitationes Vitruvianæ Primæ," Padua, 1739 (4to), has given an elaborate series of the editions, translations, commentaries, abridgments of Vitruvius, together with a list of manuscripts he had collated, in preparation for a critical edition of this author he had long purposed to give. The first intelligent editor of Vitruvius was Fra. Giocondo, of Verona, whose publication appeared at Venice, 1511 (fol.); again with Frontinus at Florence, 1513 (8vo). The edition generally most esteemed is that of John de Laet. Amst. apud L. Elzev. 1649 (fol.). Of the various translations those of Cl. Perrault in French, second edition, Paris, 1684 (fol. maj.) and of the Marquis Berardo Galiani in Italian, Naples, 1758, are incomparably the best. Upon the authority of Cælio Calcagnini in a letter to J. Ziegler, the celebrated Raphael of Urbino has been numbered among the commentators on Vitruvius. His labours to this purpose have never appeared, nor is it very probable that a first-rate genius, who executed so many great works, loved society, was gay and amorous, and died at thirty-seven, should have bestowed a length of close application on so difficult an author, even supposing him provided with the learning requisite for the undertaking.

Development of Colour.

Colour, like design, has two essential parts, imitation and style. It begins in glare, is caught by deception, emerges to imitation, is finished by style and debauched by manner. Glare is always the first feature of a savage or an infant taste. The timid or barbarous beginner, afraid of impairing the splendour by diminishing the mass, exults in the Egyptian glare which he spreads over a surface unbroken by tint and not relieved by shade. Such are in general the flaming remnants of feudal decoration. This is the stage of missal painting—what Dante called "alluminar," the art of Cimabue. Its taste continued, though in degrees less shocking, to the time of Michel Angelo and Raphael. It was for this reason that Julius II. wished Michel Angelo had added to the majesty of the patriarchs and sibyls by gold and lapis-lazuli. Deception follows glare; attempts to substitute, by form or colour, the image for the thing, always mark the puerility of taste, though sometimes its decrepitude. The microscopic precision of Denner, and even the fastidious, though broader detail of Gherard Dow, were symptoms of its dotage. The contest of Zeuxis and Parrhasius, if not a frolic, was an effort of puerile dexterity. But deception, though at its ultimate pitch never more than the successful mimicry of absent objects, and for itself below the aim of art, is the mother of imitation. We must penetrate the substances of things, acquaint ourselves with their peculiar hue and texture, and colour them in detail, before we can hope to seize their principle and give their general air. Titian laboured first to make facsimiles of the stuffs he copied before he changed them into drapery, and gave them local value and a place. He learnt first to distinguish tint from tint, and give the skeleton of colour, before he emboldened himself to take the greatest quantity of colour in an object for the whole; to paint flesh which abounded in demi-tints entirely in demi-tints, and to deprive of all that which had but a few. It was in the school of deception he learnt the difference of diaphanous and opaque, of firm and juicy colour; that this refracts and that absorbs the light, and hence their place; those that cut and come forward first, and those which more or less partake of the surrounding medium in various degrees of distance. It was here he learnt the contrast of the tints, of what is called warm and cold, and by their balance, diffusion, echo, to poise a whole. His eye as musical, if the metaphor may be allowed, as his ear, abstracted here that colour acts, affects, delights, like sound; that stern and deep-toned tints rouse, determine, invigorate the eye, as warlike sound or a deep bass the ear; and that bland, rosy, grey and vernal tints soothe, charm and melt like a sweet melody.

NOTES AND COMMENTS.

On Sunday next a memorial of Jules Lenepveu will be unveiled at Angers, his native place. Out of sympathy with the deceased Academician, it is expected that several members of the Académie des Beaux-Arts will be present at the ceremony. Jules Lenepveu was the painter of the four dramatic scenes in the Panthéon of Paris which represent incidents in the life of Joan of Arc. We have published reproductions of them. It is not often paintings are to be seen which are so correct in an archæological sense and yet remain dramatic. Another remarkable feature in them is the importance which is attached to the architectural backgrounds, and yet it cannot be said the figures are dwarfed by the massive buildings. Lenepveu owed everything to his talents. He won the Prix de Rome in 1847, and it required more than twenty years of hard work before he was able to win a seat in the Académie des Beaux-Arts. The monument is placed at the entrance to the David d'Angers Museum.

It is announced that the Grand Duke of Weimar has approved of plans for a new theatre which will cost at least 1½ millions of marks. There is no capital in all Germany in which a theatre with the latest improvements is more appropriate than in Weimar. It will be remembered that among the various duties which were undertaken by Goethe was the control of the theatre. How he acted has been described by Friedrich von Müller, who was Chancellor of Weimar. "No kind of personal sacrifice and devotion," he said, "was spared; readings and rehearsals were heard and repeated with unwearied patience, every character thoroughly defined, developed, livingly depicted; the harmony of the whole acutely conceived, carefully worked out and completed. Nowhere did Goethe more freely exercise the spell of his imposing person and air than among his dramatic disciples; rigorous and earnest in his demands, unalterable in his determinations, prompt and delighted to acknowledge every successful attempt, attentive to the smallest as well as to the greatest, and calling forth in everyone his most hidden powers, in a narrow circle and often with slender means, he accomplished what appeared incredible; his encouraging glance was a rich reward, his kind word an invaluable gift. Everyone felt himself greater and more powerful in the place which he had assigned to him, and the stamp of his approbation seemed to be a sort of consecration for life." Goethe knew from experience the value of inspiration, and whenever it came to him he took advantage of it. But he endeavoured to make himself independent of it as far as possible by a study of principles. The Weimar Theatre was a laboratory for him, in which he was able to test his own conclusions in many ways. Accordingly there is to be found in his books, letters and records of his conversations sufficient materials to serve as a guide to those who wish to undertake the direction of theatres. Since the time when Goethe reigned in Weimar many improvements have taken place, and what he says may now appear old-fashioned. His remarks are therefore mainly applicable to the theatricalism of his time. But so much was accomplished in Weimar by Schiller and Goethe, the newest theatre must always recall their names and their efforts to create a national drama.

We have several times called attention to the struggles of the cement-makers of various European countries to gain the foremost position in the markets of the United States. Although American cement of excellent quality can be produced it is insufficient in quantity to meet all the demands for the material in a country where there seems to be no limit to construction. According to the British Acting Consul-General in San Francisco, Belgium has exceeded Great Britain in the quantity of cement imported into that region, and there is an increase in the supply from Germany. But two rivals have lately appeared whose competition will not be without effect on Europeans. China and Japan are now utilising their materials for cement, and they have the advantage of being able to deliver supplies in California thirty days after the order has been received. The Irish labourers who are employed in connection with the shipping have an aversion to carrying Chinese goods, but they are easily conciliated by having green labels placed on the bags, and by labelling the cement as "Portland," as if it were an English production.

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: SOUTH CHOIR AISLE.

There is no object in Lichfield Cathedral which is more admired than the memorial of the Misses Robinson. Notwithstanding the interest of Chantrey's group, it must be owned a more important work would be desirable at the east end of the south choir aisle. The long vista requires a different termination, and it would have been preferable to introduce something which would recall the altar of St. Nicholas, which is believed to have occupied that position. One of the reasons, apart from the interest of the treatment of the Robinson memorial which makes it sought after, is to be found in the scarcity of monuments which have a history, or which are valuable as works of art. John Britton, writing in 1820, said:—"Perhaps there is not a cathedral in England that has been so completely stripped of its ancient monuments and brasses as that of Lichfield. We look in vain for fine specimens of old monumental sculpture, engravings on brass and inscriptions. Excepting two mutilated statues of bishops and two or three other fragments, all have been destroyed." One of those mutilated statues represents Bishop Pateshull. He died in 1241. As he is said to have been consecrated in 1240 his episcopate would not appear to have been important. On another monument is an effigy which is accepted as Bishop Langton's, who presided over the see from 1296 to 1321. On the other side of the aisle is a strange monument representing a knight half naked. Pennant says it represents a Captain Stanley who was excommunicated, but was allowed to lie in consecrated ground on condition of having his monument distinguished by certain marks of disgrace. Among the later monuments the most interesting is one which was designed by the late Mr. Street to commemorate the Indian hero "Hodson of Hodson's Horse." There is a relief representing the surrender of the King of Delhi. The contours of the figures will not bear comparison with those of the sleeping children, but they seem more suited to a Mediæval building.

CONVALESCENT HOME, LITTLEHAMPTON, SUSSEX. SECOND FLOOR PLAN. FIRST FLOOR PLAN. GROUND FLOOR PLAN.

The building we illustrate has been erected by Sir Henry Harben at a short distance outside the town of Littlehampton, on the South Coast. The Home faces the sea, and sufficient land has been obtained to prevent any of the views being obstructed. From its position the inmates are saved the disadvantages of living in the town, whilst they can obtain without fatigue the enjoyment of any recreation which is available at Littlehampton. The patients mainly consist of inhabitants of the Camden Town district of the Metropolis. It will be seen from the plans that ample space is afforded in the building, and that the arrangements are conducive to comfort. Care has been taken to avoid every feature which would be suggestive of poverty, and the inhabitants can enter it without any apprehension of losing their self-respect. The building, from its quiet colours, expresses repose, and that quality is predominant throughout. As an experiment it well deserves to be frequently imitated. The architect is Mr. F. Wheeler, of Staple Inn and Horsham.

EGLOSHAYLE VICARAGE, CORNWALL.

PROPOSED DECORATIONS AT ST. JAMES THE LESS, GUERNSEY.

This design has been prepared by Mr. Alfred Nightingale, of London. The groundwork consists of an architectural design carried out in shades of purple and gold, relieved by four panels representing the Evangelists in similar treatment to the two painted windows representing St. James. Instead of a reredos there is a picture of the Descent from the Cross. The figure of the Saviour, surrounded by mourners, is being reverently laid upon the earth; in the background the cross rears its dark shadow against the evening sky. An arcaded cornice runs all round the apse, and above in the dome is a representation of Our Lord in Glory.

STAINED GLASS IN ENGLAND SINCE THE GOTHIC REVIVAL.

WITH SOME ACCOUNT OF THE CHURCHES REFERRED TO.

By T. Francis Bumpus,

Author of "Ecclesiologia Germanica," "Summer Holidays among French Cathedrals," &c.

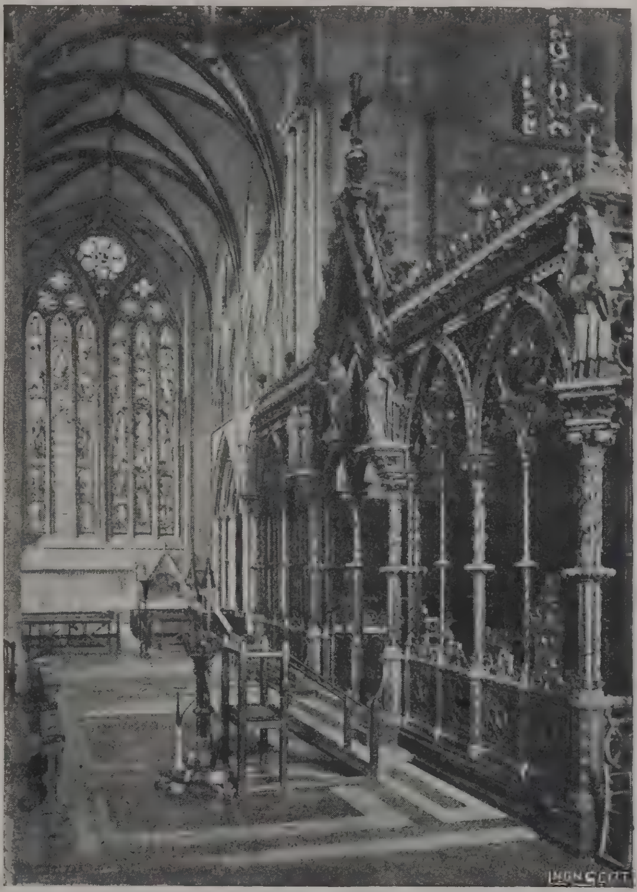
(*Continued from page* 219.)

The Works of Hardman.

Of the stained glass executed by Hardman in our cathedrals and large churches during these two decades of the Revival, *i.e* from 1855 to 1875, the largest and most important specimens are the grand east window of Doncaster Church, the eastern and western ones of All Souls, Haley Hill, near Halifax; the Lane Freer memorial window in Hereford Cathedral; the double quintuplet of lancets at the east end of Worcester Cathedral, and the eight-light Middle Pointed one at the west end of the same church. With the exception of the last named, all exhibit Hardman's old religiosity of drawing, richness, brilliancy and firmness of tincture, without, however, indicating great genius, or possessing any very high iconographical interest.

Of the Halifax windows, the western one portraying the Doom is perhaps the most successful, while in the Lane Freer memorial glass filling the great six-light window of that unique specimen of Geometrical Middle Pointed, the north transept of Hereford Cathedral, the manner in which the artist has carried his two central subjects—Our Lord sending forth His Apostles to convert the World, and His Enthronement in Heaven—across the three lights, is very bold and masterly in conception.* The arch of this window exhibits, as do those of the arcade and triforium, the peculiarity of a curvature so slight as to give the appearance of two straight lines meeting at an angle.†

The glass in the great east window of St. George's, Doncaster, was not in position until some years subsequent to the consecration of that church, which took place in 1858. Being 48 feet high and 22½ wide, the window it fills may claim to be one of the largest modern ones in England. It has eight lights, comprising treble the number of subjects from the Passion of Our Lord, within elongated medallions, the figures composing the groups being somewhat unpleasantly attenuated, and a noble wheel 15 feet in diameter, traceried with twelve radii, and having a rim formed of the same number of cinquefoiled circlets. It will be remembered that the church to which this window forms so fine a termination was rebuilt by Scott upon the foundations of the old church which was destroyed by fire in 1853, and in the designing of which he was limited by the condition that the new structure should reproduce in its essential features the old one. Thus the tower, while preserving the outline of its Perpendicular predecessor, was transmuted with much subtle felicity into one of an earlier and purer architectural period, and so on with the rest of the church, whose only external



Hereford Cathedral. North Transept, showing Freer Memorial Window.

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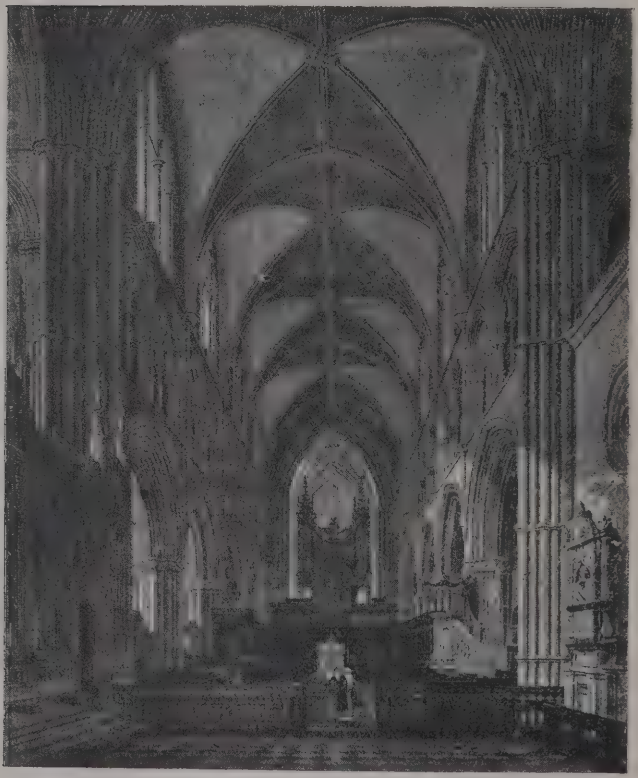
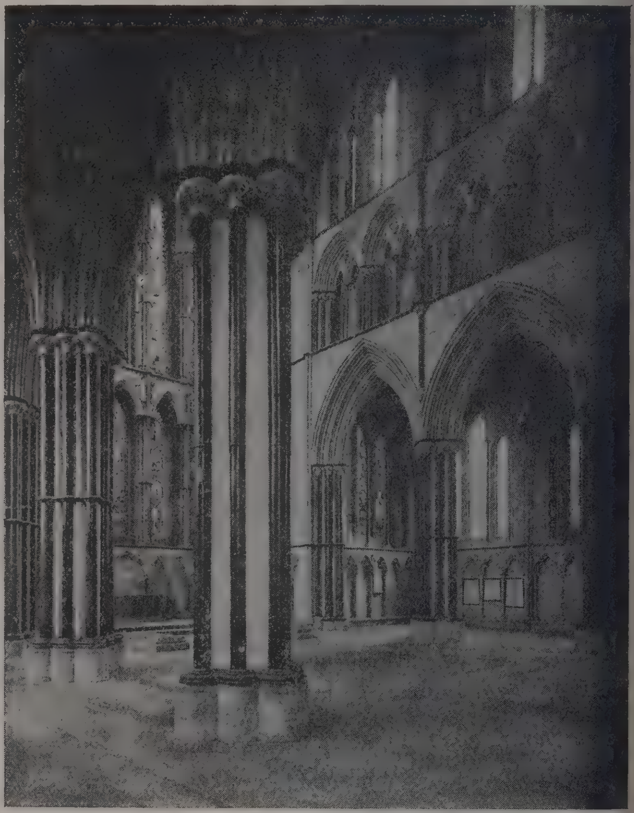
* Ruby and blue are the dominant tones in this glass, which looks at its best during a fine sunset in autumn.

† It is scarcely necessary to remind the reader that this transept of Hereford Cathedral was built towards the latter part of the thirteenth century for the reception of the shrine of St. Thomas de Cantilupe, whose body had previously been interred in the lady chapel, from which it was removed into this transept, in whose eastern aisle the graceful shrine still stands, though bereft of the saint's relics. When the works of restoration were instituted in 1841, under Dean Merewether, this transept was used as a parish church, for which purpose—as may be seen from a drawing in Storer's "Cathedrals"—it was pewed and galleried, greatly to the detriment of its beautiful detail. The same view shows the north and south arches of the tower filled up with "ox-eye" masonry, *i.e.* two half-arches springing from an octangular central column with the wall space above them pierced by an opening in the form of a vesica piscis, called by workmen an ox eye well meant but futile precautions taken probably during Bishop Bisse's tenure of the see (1712-21) for the safety of the tower, for in his report of 1841 Professor Willis pronounced the masonry of the great arches and the spandrel walls above to be "in such a state of ruin as to make an absolute repair necessary for the preservation of the tower." This work, accomplished between 1842 and 1846, and ranking among the most stupendous engineering feats of its age, was carried out under Cottingham's directions. In his *Recollections* Sir Gilbert Scott, whose works of restoration at Hereford Cathedral included that of the transepts, the choir aisles, the eastern transepts, the north porch and the rearrangement of the choral fittings—the rest of the building having been for many years in the hands of the younger Cottingham—gives some interesting particulars of the restoration of the circular windows lighting the eastern triforium of the north transept. "These," relates Sir Gilbert, "had been converted into Perpendicular windows, though retaining their early circular arches: no suggestion remained of what they had originally been. It one day occurred to me that they might have been circles, and being in the green to the eastward of the transept, I held up a half-crown piece, fitting it, in perspective, to the window arch, when I found that its lower edge just touched the sill. This led me to cut into the inserted work, when I discovered the circles, with even the grooves for their cusps, and some of the curious pear-shaped cusps themselves. The restoration of these is absolutely exact." As early as 1848 accounts of the work of restoration then being prosecuted at Hereford Cathedral make mention of "gates of wrought metal" as being expected to "form part of an open screen of metal work" as an entrance to the choir, which until this period extended across the transepts, as in the generality of Norman churches. This feature, however, was not destined to become a *fait accompli* until after the cathedral had passed out of Cottingham's hands. The elaborate metal choir screen, shown in the accompanying illustration, by Skidmore, was designed by Scott on its somewhat massive scale about 1861 with the idea that it would thus harmonise better with the heavy Norman architecture. It is a noble piece of work both in design and execution, but somewhat too loud and self-asserting for its position, an opinion entertained by Sir Gilbert himself. Had the works of refitting the choir of Hereford Cathedral been postponed for another twenty years the screen would doubtless have been assimilated to some of those choice works which seem to have reached their highest excellence towards the end of the fifteenth century. As it is, it presents all those features of freely treated early thirteenth-century work for which its designer had at that period a predilection. On a much more grandiose scale, of course, a screen of this kind might be effectively introduced, with the idea of enhancing the length of such cathedrals as Chartres, Rouen and Troyes, but this feature never seems to have been included in the great works of restoration carried out in the French churches, the State, after placing the actual building in security, leaving individual generosity—hardly so much in evidence in such matters abroad as among ourselves—to provide its fittings. Hereford Cathedral was reopened, after the various parts had for so many years been shut off from one another for restoration purposes, June 30, 1863. For this occasion several works which have ever since been regarded as classics in the library of English Church music were composed, among them being Goss's anthem, "Stand up and bless the Lord," Ouseley's "Blessed be Thou," and his Service in C for double choir.

drawback, dictated by the conditions referred to above, is the shortness of the nave compared with its height. This is no doubt due chiefly to the presence of a high-pitched roof, that of the old edifice being flat. Inside, these restrictions are more palpable from an utilitarian than an artistic point of view, the great depth of the chancel and the interruption of the lantern—a noble feature, by the way, *per se*, with its vaulted roof and its richly fretted and panelled sides—being drawbacks to the convenient performance of the Prayer Book service. The sanctuary arrangements, too, for so grandiose a building, lack dignity and religiosity, and there is about the whole an appearance of coldness and austerity which the erection of screens and parcloses may remedy, but which is certainly not mitigated by the profusion of almost too naturalistically carved foliage. In a word, Doncaster Church wants the touch of a Sedding, a Bodley, or of its architect's late accomplished son to, if one may so speak, "Catholicise" it. Sir G. G. Scott's less ambitious but more purely parochial church of All Souls, Haley Hill, will always be preferred by the true ecclesiologist to that of St. George's, Doncaster, being not only a building whose interior conveys a strong impression of completeness and unity of design, but one that marks the epoch when the sculptor first made good his claim to admission within the sanctuary, just as All Saints, Margaret Street, opened the door to the highest art of the fresco-painter.



Worcester Cathedral. Choir looking West. (*Before the Alterations of* 1867–74. *From a Drawing by Charles Wild.*)



Worcester Cathedral. The Lady Chapel.

The glass in the double tier of lancets in the lady chapel of Worcester Cathedral—perhaps Hardman's most successful contribution of work in the medallion or mosaic style made to the Exhibition of 1862,* though in some respects his triplet at the east end of Hereford Cathedral choir is preferable—was the gift of the citizens, arriving at the time when this portion of their cathedral was undergoing restoration, or rather rebuilding, at the hands of Mr. A. E. Perkins.* This gentleman (a pupil of Rickman) had begun the work of restoring Worcester Cathedral about 1856, when he demolished the forest of exaggerated pinnacles which had sprouted up at each gable end some time in the last century, substituting others of more modest dimensions. A little later the east end was taken down and rebuilt, a window with which the fifteenth century had endowed the church (but which the eighteenth had refilled with tracery of a spurious character),† being replaced by the Early English quintuplet above alluded to, somewhat unpleasantly configured, it is true, after the large existing store of First Pointed in the cathedral, and externally presenting a flatness of moulding and absence of light and shade much to be regretted. Subsequently—that is to say, between 1863 and 1866—the exterior of the building generally passed through Mr. Perkins's hands, the lancet windows, which had either been filled with Perpendicular tracery or had been transmuted altogether into windows of the Third Age, being brought back to their original form. The great north transept window was thus restored and filled with painted glass about 1870 with figure of the Twelve Apostles by Lavers & Barraud. Quite at the outset of the restorations the opposite one had been equipped with a Radix Jesse by Rogers, from a design by Preedy, and as a memorial to Queen Adelaide.

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* Blue having been thought to predominate rather too largely in the colouration of these lancets, Hardman took advantage, while the choir was in progress of decoration and refitting between 1867 and 1874, to remove some of that tincture with, it is said, satisfactory result. The subjects comprise a number from the life of Christ, the Crucifixion and Ascension being given prominence in the centre lancet of either tier. The general effect of this east end of Worcester Cathedral, with its polished marble shafts and sculpture by Boulton in the spandrels, is exceedingly good.

* Abounding as it does in detail of the most refined and delicate character, this Early English lady chapel at Worcester is internally, perhaps, the most graceful work the first half of the thirteenth century produced in this country, the restoration of 1859-63, especially that of the sculptured groups in the spandrels of the wall arcading, by Boulton, having brought out its beauties to their fullest extent. The proportions of the choir, westward of the transept, are less pleasing than those of the lady chapel, the arcade appearing somewhat crushed by the triforia—a defect, if such it may be called, attributable to the crypt, which is co-extensive with the choir only as far as the eastern transept. When Worcester Cathedral choir was rebuilt on its present graceful scale the ritualistic use of the crypt had gone out of fashion. The old Norman one was therefore left undisturbed by the Early English architect, who by placing the floor of his eastern transepts and lady chapel on the same level as that of the nave was enabled to secure for those parts of his building that *élancée* character which is their most deservedly admired feature.

† As will be seen by reference to the view from Wild's *Illustration of the Architecture and Sculpture of Worcester Cathedral* which accompanied the preceding paper.

The interior of the nave, too, was scraped, the roseate hue of the stonework once more brought to light, and much exquisite sculptural detail restored to something of its pristine beauty, in the triforium arcade. A wretchedly debased western window of 1789 gave place under the same hand to the present really noble one of eight lights, and this was filled between 1874 and 1875 with stained glass by Hardman, representing the Seven Days of Creation, very soft and beautiful, but desiderating much of the artist's old vigour which he had accuired under earlier Revival influences.

Mr. Perkins's works of reparation on the exterior of Worcester Cathedral were the subject of much adverse criticism at the time, but it must be urged in extenuation that such drastic treatment was necessitated not only by the friable quality of the stonework of which the building is composed, but by the wretched treatment the whole outside had received during the two preceding centuries, presenting, as it did, little more than a collection of mean and uninteresting disfigurements and botchings, which combined to deprive its outline of what little beauty or dignity it possessed. Even now, Worcester Cathedral externally, despite its possession of the eastern transept—a feature it shares with Beverley, Canterbury, Lincoln, Rochester, Salisbury and York—can scarcely be pronounced beautiful or picturesque, viewed from its north-east or north-west points. But interiorly, since the conclusion of the restorations of 1867-74,* it may safely be affirmed that of all our cathedrals in which the high, close choir screen of stone has been superseded by the light open one of wood or metal-work, none is more impressive in general effect upon entering than Worcester, or so thoroughly looks what it is, the mother church of one of our most thickly populated, if not most extensive, dioceses. Perhaps this feeling of religiosity is enhanced at Worcester by the location of the cathedral's two most important *instrumenta*—the rood-screen and the reredos—at the summit of gently rising flights of steps, the dignified double tier of lancets closing a vista the mystery of whose effect would undoubtedly be enhanced by the insertion of stained glass in the clerestory of the choir.

The entire structural reparation of Worcester Cathedral was due to Mr. Perkins, though Sir Gilbert Scott had been occasionally, but not to any great extent, consulted by the authorities.

However, Sir Gilbert became officially connected with Worcester Cathedral in 1864, when the question arising of restoring that portion of the choir between the tower and the eastern transepts, of decorating it, of adapting it to a more stately ritual, and of throwing it open to the nave and aisles for congregational purposes, he drew up a report to the Dean and Chapter unfolding his plans for such a redistribution, which plans, with certain modifications, were eventually carried into execution. In this Sir Gilbert Scott acted conjointly with Mr. Perkins, who dying in 1873, just as the works were drawing to a close, did not live to witness the church with which he had been so long and intimately associated thrown open from end to end in all its restored beauty and ritual completeness.*

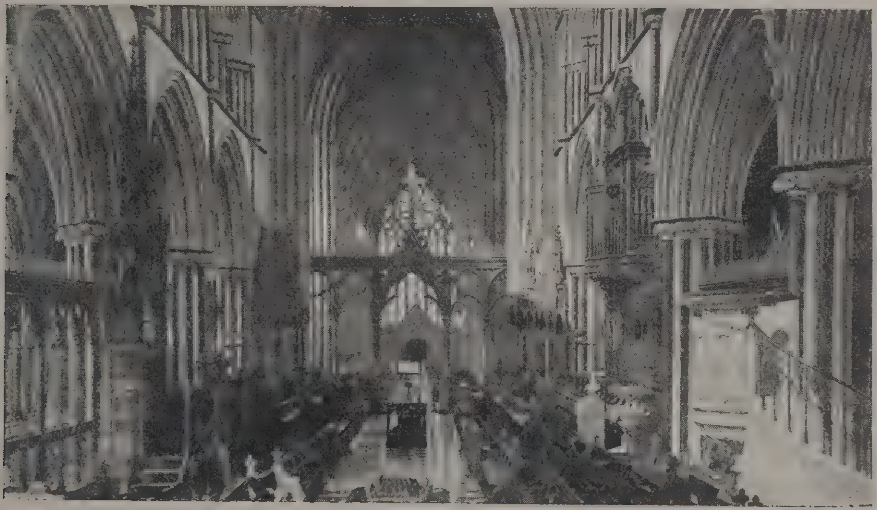
Until the closing of the choir in the May of 1867 for these works, this portion of Worcester Cathedral exhibited one of the most charming and interesting, and, it may be added, valuable instances of post-Reformation choral arrangement in England, some idea of which may be gleaned from Wild's drawings.

The organ screen was, however, a worthless erection of 1812, but it seems a pity that at least a portion of the Caroline backs and canopies to the stalls, as well as the Perpendicular parcloses and the screenwork which until 1867 served as a reredos, could not have been worked up into the new arrangements.

In the chapter-house at Worcester may be seen a couple of photographs taken after the choir had been denuded of its post-Reformation fittings, and probably about the year 1870. One of these views, that of the choir looking west—closed at the western tower arch by hoarding—is valuable to the student from the manner in which the side elevations are shown emancipated from furniture, the same photograph giving a good idea of the rough rubble-work of reddish tufa which had been exposed by Mr. Perkins when, under his direction, the choir roof was stripped of its plaster.

To the retention of this rough material Lord Dudley, a munificent contributor to the work, objected, so the vault was replastered as a vehicle for the decoration which we now see, the scheme for which was drawn up by Sir Gilbert Scott himself, Hardman being entrusted with its execution. In designing this roof decoration, which consists of figures within medallions on a cream-coloured ground, relieved by scroll-work, Scott aimed at non-perspicuity of effect. This allows of a slight difficulty in discerning the pattern at first sight, but it undoubtedly has the effect of enhancing the height of the choir.

The other photograph referred to presents us with the curious method resorted to in the Tudor period for strengthening one of the clusters of Early English shafts of the northern arcade, by encasing it on three sides with Late Perpendicular panelling. The same view shows the old pulpit canopy, seen in Wild's view, and apparently representing curtains drawn up; but


Worcester Cathedral. Choir looking West. (*Since the Restoration.*)

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* The cathedral was reopened with imposing services April 8, 1874.

* For the Three Choirs Festivals of 1869 and 1872 the hoarding filling up the western tower arch was temporarily removed. It is possible that Mr. Perkins was present on one of these occasions, and saw the church, though in a somewhat inchoate condition, open from west to east.

this, as well as the above mentioned Tudor casing of the pier to which the pulpit is attached was "restored" away, unknown * to Sir Gilbert Scott, not long before the works in the choir had reached their conclusion, the architect deploring the loss of these two features in his "Recollections." To high-handedness in certain quarters, to divided responsibility, and to the serious illness which attacked Sir Gilbert Scott during the winter of 1870-71, must be attributed the several mistakes made in redistributing the choral arrangements of Worcester Cathedral—mistakes which, now that time has toned down the hues of the various materials of the new fittings and decorations, may to a certain extent be condoned. Indeed, it must be conceded that the general effect, whether looking east or west, is very fine.

THE ARCHITECTURAL ASSOCIATION.

THE opening meeting of the session 1900-1901 was held on Friday evening last in the rooms of the Royal Institute of British Architects, Mr. W. H. Seth-Smith, the president, in the chair.

Mr. G. H. Fellowes-Prynne formally proposed the adoption of the committee's annual report and balance-sheet. They could honestly say that the past session of the Association had been a successful one. The attendance at the classes and meetings had been satisfactory, and financially the Association stood on a very sound footing.

Professor R. Elsey Smith seconded the motion, which was carried unanimously.

A vote of thanks to the auditors was also passed.

The President proposed a vote of thanks to the R.I.B.A. for the ninth annual grant of 100*l.* towards the educational scheme.

The motion was heartily carried.

Mr. G. H. Norman was elected a member.

The Hon. Secretary, in proposing votes of thanks to those who had made donations to the library, included the name of Mr. Samuel Gardner, of Harrow, for a valuable collection of photographs illustrating English architecture given to the Association.

The motion was passed.

The President then distributed the prizes, the list of which has already appeared in *The Architect.*

The President delivered his

Opening Address.

In one of Lord Rosebery's happy speeches, when receiving some civic distinction, he begins by saying that he was full of an uneasy feeling due to a sense of unworthiness which accompanied it. I assure you, gentlemen, I entertain that sentiment to-night when I thank you for the honour you have conferred on me by electing me to the chair.

My first word must be one of congratulation upon the prosperous condition of every department of our Association. We now number 1,291 members, and no one taking the trouble to read the annual report can fail to observe how great and varied is our work, how well it has been maintained and how rapidly developed. There has been uninterrupted progress in the growth of our membership from the first. That prosperity during the past two years has been in no small degree due to the enthusiasm and unwearied exertions of the retiring president, Mr. Geo. H. Fellowes-Prynne (ably assisted by the energetic committee and other officers), who, during his term of office, notwithstanding his large practice, took the chair not only at every general committee and at all the ordinary meetings, but also at most of the innumerable sub-committees. His admirable epitome of the history of our educational work in the past, as given in his first presidential address, relieves me of that difficult task. Such devotion forms a record surely even in the Architectural Association, to serve which nearly every well-known London architect, and many in the provinces, have cheerfully given so much time, thought and experience. I hope the Association may before long be in a position to realise his workshop scheme. It is only want of space which has so far hampered what our students much need in this direction.

It is my duty to record our sense of loss in the death of six of our members during the past session.

On the whole, the students have shown commendable zeal by supporting all branches of our work, but it is necessary to warn some that no reading at home will make up for irregular attendance at the studio and the classes. System is as essential to study as to practice, and must be adhered to if we are to become proficient. Our registrar reports that when business is brisk in London he has no difficulty in finding a good berth for every well-equipped young man when he emerges from the student stage, but the register contains too many who lack a knowledge of construction or the ability to design, and who realise too late their neglect of precious opportunities for making themselves competent assistants, and in due course of time capable architects. On the other hand, I would advise those working in the classes not to slacken their home work or to relax their exertions as the session advances; some students commence with enthusiasm, but as the session progresses their earnestness appears to decrease.

Our school of design offers the greatest attraction and the most unique opportunity for cultivating skill and taste. The subjects, as you know, are set and the designs are criticised by a large number of the most artistic and able architects in London; nor can I refrain from urging our students never to miss the spring or summer visits, by which we arrange to see the best old work as well as the most important buildings in progress of erection. Can anything be of greater value to all of us, old or young?

The power of giving public expression to our thoughts and so of eliciting the ideas of other men is one to be cultivated by every young man, and members will find a fitting opportunity for this side of their education in our discussion section. They will at the same time be surprised at the amount of knowledge they derive from the debates.

I scarcely think our A.A. Sketch-book, in which the best measured work of the members is published in quarterly parts, and which makes such a valuable book of reference in any architect's library, is sufficiently well known. We shall be glad if some of the members are disposed to encourage the energetic honorary editors, Messrs. W. A. Pite and W. G. B. Lewis, by subscribing to it this year.

The library needs better support. Students should not be afraid of borrowing certain books on account of their large size.

Perhaps many of our young men are too busy in their evenings to attend more frequently than they do the papers read to us by the best men on the various subjects selected. Let me say they little realise their loss every time one is missed. Such papers generally represent the experience of a lifetime compressed into an hour's discourse and given gratis. The generous way in which these Esaus part with their birthright to their hungry younger brethren often astonishes me.

No greater compliment could have been paid us than that Mr. Florence, our senior delegate to the International Congress of Architects in Paris, was on one occasion called upon to occupy the chair of that distinguished assembly. It is also gratifying to note that twelve of the nineteen awards by the international art committee to English architects were made to members of the Architectural Association.

Eleven of our members have served in the Transvaal War, and I regret to say that one of these volunteers lost his life there.

Gentlemen, we are entering upon the session which will see the commencement of the twentieth century. It is the privilege only of a very small minority of mankind to experience the emotions which such an occasion must inspire To a much smaller number has it been given to review a century such as that to which we bid farewell. Shall we be safe in defining true progress as the increase of the sum of human comfort and happiness? If so, surely the past century has seen more progress not only than any previous hundred years, but perhaps than all previous centuries put together.

The root of this progress has been the practical application of the central truth of christianity, viz the universal brotherhood of mankind, and from this root has sprung universal education, and to education may be attributed all the splendid achievements of modern science.

But amid this phenomenal activity in science, has art been asleep, or has she made any corresponding contribution to human happiness? Has it been a century as fertile in the production of poetry, painting, sculpture and architecture as in the discoveries and inventions of science? Perhaps not This is an interesting inquiry, and my own belief is that the intellectual activity of the century has shown its influence in art as well as in science, though not in the same degree. A century which has produced the great and essentially English water-colour school and such truly poetic schools as are best represented by Corot and Millet in France, and by some perhaps equally great Dutch and English artists, notably Turner, cannot be said to have been indifferent to art. Poetry and architecture, too, have been active enough in all conscience, even if wanting in concentration and consequent power. Music may be said to have triumphed; we are fast becoming a musical people.

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* Sir Gilbert's plan was to erect a double open jubé to the choir, a feature for which the blank wall space to the west of the bays is admirably adapted, placing upon it the keyboard of the organ and the choir organ itself, drafting off the heavier parts to the abovementioned wall space. This suggestion was warmly seconded by Sir Frederick Ouseley, but the instrument was in the sequel, and to Scott's great sorrow, placed within the second bay of the choir on the north side, blocking up the aisle. The reredos in Worcester Cathedral—the *motif* for which was, it is believed, furnished by the remains of one in the refectory, now the King's School—was one of the first *instrumenta* placed in the choir during its refitting between 1867 and 1874. The reredos itself was in position by the summer of 1868, and, although a work of undoubted dignity and one of the most successful designed by and erected under the superintendence of Scott in various parts of the kingdom, falls somewhat short in reality of one's preconceived notions of how the subject which it is intended to convey the idea of—the Saviour in Glory—should be treated. While the choir was in course of refitting the services were held in the nave, the altar, with a curious disregard to orientation, being set up at the west end.

The faculties and habits of mind which respectively develop science and create art are essentially different; the one class of mind is objective, the other subjective. The one is inquisitive, familiar and practical in her friendship with nature, the other is reverent and imaginative. The two classes of mind, both nature's offspring and complements of one another, may be living their own lives side by side in an age in which the mind of the vast majority of men is centred upon science and its material benefits, but that age is in the nature of things unlikely equally to encourage, though it may pave the way for the fine arts. Do not misunderstand me here; art is not a rival of science, but it is a higher law regulating, and a feeling pervading every invention.

We are on different ground, however, directly we deal with the applied art of architecture. Here we shall find that science has always been the origin of its greatest departures. The arch and its multiform developments and resultant features are ancient witnesses to this truth. If we consider, moreover, the extent to which education and sanitary science have multiplied and specialised the buildings which we are now called upon to design, we shall recognise at once how enlarged are our functions, and how likely it is that the twentieth century will see still greater developments.

As regards monumental architecture, the imperious command of one great patron has given place to the more imperious directions of a co-operative body themselves merely fiduciaries of the will and purse of the community. But the wants of this co-operative community, if not so colossal, are infinitely more numerous and varied. They call for town halls, municipal offices, colleges, schools, polytechnics, hospitals, asylums, workhouses, electric-lighting stations, baths and washhouses and what not. Surely, gentlemen, there is no room for disquietude as to the future of architectural practice if our training is equal to the demands of the public and if the policy of our profession is broad and well directed. All these are modern requirements, and show how really changed are the conditions of our work, how varied and how complicated that work has become and how impossible it is to put the dial of time back, or to depreciate the influence of science. Why should we struggle to cast the mould of future architecture to the form of our own narrow and short-sighted prejudices? Our duty is clear and unmistakable, namely, to accept, and accept joyfully, the altered conditions of our age, and to do what our hand findeth to do in a spirit of devotion to the present and confidence in the future.

Taking its origin in the knowledge of building construction, and inseparable from it, the essence of architecture is nevertheless beautiful design, design full of thought and feeling. This differentiates it entirely from mere construction however rude or however scientific. This constitutes our art. Design is to building what religion is to life, what poetry is to language, the indefinable and spiritual, the changeless element, the one thing needful. It leaves the prose and business of our calling essentially what they were, every department of our buildings worthy of our close and vigilant care, but makes us conscious of a higher order of desire and affection that guides us through all these and lifts us above commercialism. The latter is the instinctive faculty common to all, the former (art) is the conscience. The man who has this spirit is alone the true architect, and the ideal society of architects would be one from which all others would be excluded. It is the decree of Providence, however, that both shall grow together in spite of our rough tests, which may, it is true, do much, but can never be infallible. We need not regard engineers or builders as serious rivals in our field so long as we are true to this ideal and insist as far as practicable on its possession and its cultivation by every man who bears the title of architect.

Allow me to utter a note of warning to our students against pinning their faith exclusively to any of those schools of thought which lack the sense of proportion, and tend just now to lead us away from the broader fields of systematic study; schools which on the one side insist that we should be content to be craftsmen and builders, and on the other hand appear to regard draughtsmanship and design as the be-all and end-all of an architect's training. None can know too much of construction, none can draw too well, but bear in mind Sir Joshua Reynolds's remark, "How difficult it is for the artist who possesses this facility (of accurate and rigid declination) to guard against carelessness and commonplace invention is well known." How frequently we see this truth illustrated in Royal Academy pictures by the cleverest men.

Then there is the non-traditional school, insisting that we should divest our minds of the forms of past work and invent our own. All these schools have originated in the gross neglect of training in draughtsmanship in some, the equally egregious want of practical knowledge, or a slavish copying of ancient architecture, in others. They are each emphasising all-important truths, and wherever great truths are enunciated, be they only a fraction of the verities, we should receive them gladly. As a matter of experience, it will be found that the full truth lies somewhere between these extremes, and that the best architect will be both a wise and experienced builder and a good draughtsman and designer. If he be great enough to add archæology and other subjects he may be a happier man, but not necessarily a better architect.

It is not to be expected that many men should be equally strong on the scientific and artistic sides of our calling, nevertheless there is no excuse for the existence of two classes of architects which specially bring the profession into disrepute. On the one hand those who are grossly ignorant of structural work and confine themselves to the study of design from the artistic standpoint, and on the other hand the men who have technical knowledge, but who ignore architecture as an art. It is difficult to say which of these classes does the most harm.

The key-note of the best work of our younger men is enthusiastic love of beauty in form and colour (irrespective of the amount of remuneration its pursuit may bring), thought as to the capacities of the material in hand, and individuality in feeling. It is fearful of the pedantic and the commonplace, faults so often associated with too academic a training. Can we wish for a better spirit? Personally I have no fear of the future of English architecture on the score of pedantry. Our lithic language savours perhaps too broadly of our national characteristic individual freedom. We are apt to forget how much our literature and even our fine arts owe to exotic sources. We can surely afford to be as tolerant professionally as we are nationally and imperially.

The antidote of academic uniformity lies in the study of nature. The man who keeps his mind in harmony with nature will have recorded, however unconsciously, the great principles underlying stability and composition everywhere observable in nature. These principles, violated as they so often are in our buildings, will be instinctively detected and condemned by a true artist, to whatever branch of art he may belong. An architect imbued with these principles will not advise his clients to erect a severely Classic style of house in a very rural spot. He will select a more picturesque type as more harmonious with its surroundings. It is the withdrawal of all nature's conditions and restrictions which makes a more formal and dignified style more suitable to city architecture. Of course if your building approaches the scale of a palace, and the interval between it and unfettered nature can be disciplined by formal and architectural gardens, it is another thing. So far our sense of fitness has been so true that English country houses are renowned for their appropriateness to their environment. It is this contact with nature, moreover, which, with her infinite variety appealing to the equally diverse character of the human mind, will preserve our individuality of taste. I submit that it is the neglect of this study in France which has done so much harm to its rural architecture. The French architectural school is one of exclusively civic and monumental artists. It is at home among man's creations; it appears to have no sympathy with the works of nature.

On the other hand, Mr. Warren in his paper read before the last annual convention of the American Institute of Architects, on the influence of the French school of design upon architecture in America, most justly commends this school for its insistence on composition, its excellence of proportion and mass and its mastery of monumental planning. These points are admirably exemplified in the two new palaces in the Champs-Elysées, and we shall do well to study them carefully.

A notable feature of our people has always been to preserve a national character in all our institutions and in all our schools of art, while freely adopting such features of other systems as commended themselves to us. It has always been so with our architecture; it is so to-day, and this consideration warrants confidence that our architectural profession will not blindly follow any school, but evolve one of our own.

It is upon a wide basis that the A.A. curriculum has been founded and has worked so well. The better education of the profession is our mission. It is a mission which finds support and sympathy from every school of thought among us, and it may be safely said the A.A. has not an enemy, scarcely a critic. Our watchword has been, and will I hope ever be, continuity of policy and progress with the times. How are we fulfilling our mission? Our educational work is, as you know, conducted wholly in the evening; there are 200 students attending our courses, and about 200 more of our members may be said to be still in the student stage of their career.

The characteristic of our Architectural Association seems to be, to use the pithy expression of a popular past president, the power to enthuse. But enthusiasm, like others among the best of things, is a dangerous endowment unless well directed.

It has led many a man to be impatient of that strenuous effort for the mastery of the prose of building which is so essential; but this patient and sometimes irksome work will alone give him a solid satisfaction without which enthusiasm for art must wither and die in the failure of his practice. As to the need for the study of the history of design—a point much debated just now—I venture to reiterate the words of the reader of an able paper two sessions ago. Mr. Reginald Blomfield then said what I believe to be profoundly true, and I quote him because we all regard him as a good architect and because I cannot put the thought into better language:—

> In architecture, the oldest of the arts, we can only consider ourselves on safe ground so long as we keep in touch with what has actually been. The days of the craftsman working independently, yet in unconscious unison, ceased when the choice of styles arose. He tasted of the tree of knowledge, and henceforth to his knowledge of the craft had to be added the responsibility of conscious judgment if he was to undertake, I will not say architecture, as it might be thought to beg the question, but building of any sort, because in any building nowadays a man has to use one method of expression in preference to another, and implicitly in this there is raised the whole question of selection. Now this responsibility proved too much for the simple craftsman, as you may see from the blunders in design which abound in more ambitious Jacobean works; and it was only a question of time how soon there should arise the man who had sufficient training and intellectual capacity to enable him to discriminate between good and bad, to enable him to grasp the logical coherence in expression which is an essential element of architecture. As soon as such a man arose the matter was settled for good or bad. The architect ceased to be a craftsman in the technical sense, and what might be lost in craftsmanship was assuredly gained in architecture. I think, therefore, that this critical function of an architect, this detachment from the actual details of craftsmanship which chafes the enthusiasm of some of by no means the least gifted of our younger men, is of the very essence of his work. His craftsmanship must be of a wider range, it must embrace full knowledge of the past; it must rest on a constant habit of analysis of the best methods of expression in building.

One thing on which all who are experienced in the training of the human mind are agreed is that a good general education must precede special knowledge. This is an axiom which guides your committee in their educational work. It finds expression in the large number of subjects we provide, all of which we consider it of importance that every architect should be acquainted with. It is essential that our curriculum should aim to be comprehensive, to lay a good foundation of general architectural education which will fit men to adapt themselves as readily as possible to the special line they may wish, or be compelled to adopt. If your foundation is not sufficiently deep and wide you will sooner or later show signs of settlement.

So much for our successful past and hopeful present. I will now with your kind indulgence deal with what I am persuaded we ought at once to take in hand. I refer to the establishment of day courses of instruction, and I will give you reasons which I think will commend themselves to you as indisputable. Not that I claim originality for this idea. It has, like almost every other subject which affects the profession, been discussed many times by your committee, but dismissed for the time being mainly on financial grounds.

In the first place, our system of pupilage, necessary and excellent as it is in principle, is still admittedly and radically faulty, from the standpoint both of the master and of the apprentice. The former is too busy to undertake the pupil's education; it is as much as he can do to give him the run of his office, to allow him to spoil material and waste his paid assistants' time in gleaning what knowledge he can. The latter finds himself irrevocably bound to serve at least three years even if he discovers within the first few months that he has mistaken his vocation. A two years' full course of study in a purely architectural college controlled entirely by experienced architects would obviate both these objections to the present system without in the least endangering it, and I am sure that most architects in practice, and probably every Fellow of the R.I.B.A. would, as an encouragement to a movement which would secure useful servants from the first, not only agree to accept a rather smaller premium, but probably also a less lengthy apprenticeship. The pupil, on the other hand, would as a rule discover during his first two or three terms in such a school whether he was fitted for the work, and would be free to drop its further pursuit without loss of time or premium. It would be a truly advantageous arrangement to both parties.

Another cogent reason is that we already have the premises needed for a start, most of the apparatus and some of the staff, and that consequently we can run the school economically, and in about three years time it ought to become a substantial source of revenue, enabling us to do what we have of late proved we cannot do on our present income, viz build or rent premises to suit our ever growing needs and in a neighbourhood worthy of our position. If we fail to seize this opportunity others will certainly do the work which I believe to be the great mission of the Association. With the exception of the Victoria University at Liverpool, I believe King's College is the only institution in this country which has an architectural day school, but King's College architectural course appears to be a department of what is really an engineering school. May I here say how warmly we congratulate our late instructor in Classic architecture, and present vice-president Mr. R. Elsey Smith on his appointment as professor of architecture to that college?

We should have no difficulty, I am sure, in obtaining guarantees of financial support for three or four years, during which we must expect to make a loss. This was the method pursued so successfully in 1891 in launching the present curriculum.

Our standard of training is far behind that of other countries. The paragraph in Messrs. Florence and Balfour's report of the drawings exhibited at the Paris Exhibition is not flattering to our English pride. It reads thus:—"Your delegates could not help comparing the skilled design, the able execution, the artistic feeling and patient care displayed in these drawings with the careless and slap-dash effects which seem to be sufficient for the student of the present day in England."

Let the Architectural Association hope for some liberal benefaction to put it on a satisfactory and permanent footing. There are many very wealthy men in this country who sufficiently realise the immense importance of the art of architecture as the most important and permanent expression of civilisation and of national greatness, to contribute in a substantial manner to the establishment of a college for the education of the profession, if once they became aware of the urgency of the need. It is not generally realised how poorly paid the architectural profession is, and how consequently impossible it is adequately to endow its own teaching.

A school such as I suggest this Association should open would be a fair start for the higher training we so much need.

It has probably occurred to many that the Association, as the principal architectural teaching body, should be officially recognised by the new London University. The committee will not lose sight of this important question, but in view of the character and standard of technical training the University requires, I do not think we can just now expect to do more than obtain its official recognition for our teaching staff.

As regards examinations the good old English proverb is true to human nature, "You cannot put an old head on young shoulders," and no man of common sense expects more than a very small fraction of youths to be sufficiently enthusiastic (in the abstract) to put forth their best efforts to acquire skill and knowledge (for their own sake) before they know their joys and their value as a means of livelihood. It is therefore necessary to provide some incentive to work. Our system of studentship and of prizes is founded, of course, on this obvious truth. Experience proves that the best course of systematic training falls to the ground without some such stimulus. There is no prize so precious as the testimony of the leaders of one's profession that one has sought by long and well-directed study to make oneself proficient in one's calling.

I find that out of the total number of London candidates in the R.I.B.A. qualifying examination last year, 48 per cent. in the intermediate and 63 per cent. in the final were students of this Association.

The possession of ability to design and to draw are comparatively rare gifts (in combination especially with business and constructive capacity), but they are absolutely necessary to an architect. Both can be sufficiently tested to exclude from the Institute men who are grossly deficient in these qualities. Can anything therefore contribute so greatly to the improvement of architecture, as an art, as an examination in these? Let it be borne in mind that the temptations to take up architecture as a business are as numerous as the opportunities are great as compared with those presented by painting or sculpture. Consequently we are bound to choose between retaining our present examinations in art as well as science as a qualification for membership of the Institute, or of admitting builders equally with architects to a test of knowledge of construction, only with the certainty that this qualification would in the public estimation be equivalent to a complete architectural equipment. This art test is our only hope of purging the profession, as far as may be, from the commercial spirit, the worship of Mammon. To those who are just joining our courses of study I will give no further advice; they must already be wearied with my platitudes, but I will offer them some refreshment in the words of one of the greatest of modern artists. Louis Stevenson penned these words at Fontainebleau with the spirit of Millet beside him, and although they were addressed to a youth who was thinking of making painting his profession, they may with almost equal force be applied to every aspirant to our calling, and you may substitute the word architect for artist all through the quotation:—

> The vast mass of mankind are incapable of doing anything reasonably well, art among the rest. The direct returns—the wages of the trade (art) are small, but the indirect—the wages of the life—are incalculably great. No other business offers a man his daily bread upon such joyful terms.

In the life of the artist there need be no hour without its pleasure. Suppose it ill paid, the wonder is it should be paid at all. Other men pay, and pay dearly, for pleasures less desirable. The public knows little or nothing of those merits in the quest of which you are condemned to spend the bulk of your endeavours. Merits of design, the merit of first-hand energy, the merit of a certain cheap accomplishment which a man of the artistic temper easily acquires—these they can recognise and these they value. But to those more exquisite refinements of proficiency and finish, which the artist so ardently desires and so keenly feels, for which day after day he recasts and revises and rejects, the gross mass of the public must be ever blind. . . . Under the shadow of this cold thought, alone in his studio, the artist must preserve from day to day his constancy to the ideal. It is this which makes his life noble; it is by this that the practise of his craft strengthens and matures his character. . . . Many artists forget the end of all art: to please. It is doubtless tempting to exclaim against the ignorant bourgeois; yet it should not be forgotten it is he who is to pay us, and that (surely on the face of it) for services that he shall desire to have performed. Here also, if properly considered, there is a question of transcendental honesty. To give the public what they do not want, and yet expect to be supported: we have there a strange pretension, and yet not uncommon, above all, with painters. The first duty in this world is for a man to pay his way; when that is quite accomplished he may plunge into what eccentricity he likes, but emphatically not till then. Till then he must pay assiduous court to the bourgeois who carries the purse. And if in the course of these capitulations he shall falsify his talent it can never have been a strong one, and he will have preserved a better thing than talent—character. . . . The artist is of the Sons of Joy, chose his trade to please himself, gains his livelihood by pleasing others, and has parted with something of the sterner dignity of man. . . . If you adopt an art to be your trade, weed your mind at the outset of all desire of money. What you may decently expect, if you have some talent and much industry, is such an income as a clerk will earn with a tenth or perhaps a twentieth of your nervous output. Nor have you the right to look for more; in the wages of the life, not in the wages of the trade, lies your reward; the work is here the wages.

On the still larger question of the legal protection of the title of architect, I would call attention to the growing feeling abroad as represented by the resolution by M. Couran carried, I understand, with unanimity at the recent International Congress of Architects at Paris. It runs as follows :—

"That governments take measures to protect and insure respect for the title of 'architect' by reserving it for the future, and without retroactive effect, to architects provided with a proper certificate, by forbidding others to use it, and by putting it within the reach of all by means of the diffusion of architectural education."

In the monstrosities which deface every new street and so large a proportion of our recently cleared sites in London, there is no lack of desire for architectural effect, and all this, let us bear in mind, represents a demand on the part of the public who are now wealthy enough to afford the luxury of art. The fault is in the ignorant expression of this ambition by men who presume to call themselves architects. It is knowledge and taste we want, and none but men who have spent their lives in patiently acquiring and practising this knowledge can design a good street front. There is, to my mind, little doubt that "taste" (the subtle and most precious attribute of every true architect) is largely a matter of experience or, if you like, of knowledge. It is possible not to associate with persons who use the language of Billingsgate, but the educated community cannot avoid continual contact with the architectural Billingsgate, which first offends then prostitutes our æsthetic sense. We may, however, congratulate the London County Council for showing that it is alive to its responsibility in protecting the educated public from such shocks to their feelings in relation to the frontages of the new street from the Strand to Holborn. Let us hope this effort will be a success. Another hopeful sign of the times is that some of the great London freeholders, in rebuilding their estates, insist that an architect of established reputation in design shall be employed by the lessees. Here again we have the evidence that influential parties interested in supplying the demands of the middle classes realise that the public are beginning to want, and are prepared to pay for, good work.

The prospects before us were never so bright as to-day. Besides the ever-growing demands at home for all kinds of special public buildings, there lie beyond our shores immense and rapidly ripening fields for architectural skill. Few of our young men can have considered the growth of innumerable towns in Africa, India and the more eastern of our colonies without its arousing the spirit of adventure and a certainty of occupation, and bear in mind that it is London-trained men who are mostly in demand for such situations.

When cities are being conceived and largely erected in two or three years (Khartoum for instance), all designed by Royal Engineers, one asks oneself what training in architecture do Woolwich and Coopers Hill and other colleges afford? I believe nil. If art is not for ever to be ignored by English Governments why should it not be made a rule that each young engineer who is appointed to Government architectural work in the great cities of our dependencies should have a year in our leading architectural schools or offices?

A movement among us full of promise for the future of architecture, and one which was the keynote of this year's Congress of Architects convened by the Institute, is the alliance of the architect, sculptor and painter as well as the artist-craftsman in the production of a building of any importance. Such brotherly counsel, combined with a clear conception in the mind of the architect of the effect required, ought to result in buildings of greatly increased beauty and interest. It would tend to this happy co-operation in the constructive and decorative arts if our studio could in some way be made preparatory to the Royal Academy School of Architecture, which naturally will take only advanced students. If this were found impracticable, possibly on the social side of the Architectural Association (a side we hope will ever be encouraged by all concerned), a rendezvous may be devised which will bring the students of all these arts into closer touch in their early days.

What age other than our own can claim to have supplied subjects for sculptors and artists so magnificent in their conception or fraught with greater hope for the immediate benefit of mankind in general? They may record in stone and colour in our buildings the vast truths of evolution, or celebrate the welding together of an empire whose arms exist alone for the defence of liberty. Can we as architects have a higher ideal before us than to dignify and beautify the Metropolis of such an empire, and this should be the ambition of every member of our Association. And then when this is done—

> We shall rest, and, faith, we shall need it—lie down for an æon or two,
> Till the Master of All Good Workmen shall put us to work anew!
> And only the Master shall praise us, and only the Master shall blame;
> And no one shall work for money, and no one shall work for fame,
> But each for the joy of the working, and each, in his separate star,
> Shall draw the Thing as he sees It for the God of Things as They are!

Mr. G. H. Fellowes-Prynne proposed a vote of thanks to the President for his address, which was seconded by Messrs. E. W. Mountford and C. H. Strange.

A congratulatory telegram expressing the regrets of his absence was read from Mr. Wm. Emerson, president of the R.I.B.A.

TRURO CATHEDRAL.

In a letter to the *Times* Lord Mount-Edgcumbe, chairman of the building committee of Truro Cathedral, writes :—There could, I know, hardly be a more unpropitious time to invite the attention of the public to this subject, but the moment is one of such extreme importance to the progress of our work that I feel constrained to appeal to all who take any interest in its completion, and to beg that, if they think of ever doing anything more to help us, they will give, or at any rate promise, that help now. The facts are these. After the death of Archbishop Benson a movement was set on foot to complete the nave of the cathedral which, as first Bishop of Truro, he had founded, and in 1898, having nearly 30,000*l.* in hand, the committee, after much consideration, determined to remove the great temporary wall which closed in the western end of the previous work and to build the nave and west front.

The work has progressed with almost unexpected rapidity, and is being admirably done; but how far it can be completed has to be determined almost immediately. Two alternative contracts were entered into—one carrying the western towers up to the eaves of the aisles, the other up to the eaves of the nave. The difference of cost between the two is 3,200*l.*, and we still require 2,500*l.* to complete the lesser scheme including all charges, or 5,700*l.* to complete the whole.

But the difference between the two schemes themselves is very great. If the committee is obliged to abandon the larger one (and, as I have said, the question demands an almost immediate decision), there will have to be more temporary walling, involving a waste of 400*l.* or 500*l.*, and rendering the exterior unsightly for many years to come. On the resumption of work new scaffolding will also have to be erected at further cost within the building.

If, however, we can now obtain sufficient promises of help to justify us in going on with the larger contract, not only will that waste of money be avoided and the external appearance much improved, but, what is more important, the interior will be thoroughly and finally completed. I shall be happy to give another 100*l.*, and 200*l.* more on the completion of the larger contract, if adopted, when the Lord Bishop of the Diocese, who earnestly supports this appeal, will also give another 100*l.*; and I venture to repeat the earnest hope of the committee that all who are likely ever to help us will do so now. I think it would be safe to promise that if this work can be achieved the building committee will make no further appeal to the present generation.

The treasurer is Mr. A. P. Nix, Truro.

RESTORATION IN IONA.

A CORRESPONDENT of the *Scotsman* writes:—I recently visited the far-famed island of Iona, and was gratified to see that since my last visit steps had been taken to keep the ruins of the cathedral, nunnery and St. Oran's churchyard in better order than ever I can remember to have seen them. When first I visited the island a great number of the tombstones were practically lying underground, and almost all of them were covered with lichen. This year, however, I found that these stones had been carefully uncovered and placed within neat iron railings, thus allowing the beautiful ornamentation and inscriptions to be seen to advantage. Matters are, I understand, in progress for the restoration of the cathedral, but it is to be hoped that the trustees who own the fabric will confine themselves to the task of taking such steps as will merely keep it in good preservation, without outraging the feelings of people who have a regard for the antique and beautiful in architecture by having this very interesting ruin patched up after a modern pattern. One thing I saw marred the beauty of the ruins and detracted from my pleasure at seeing them. In the nunnery some one has erected an ugly shed bearing this inscription:—"Orders taken—wood-carving, copper and brass." The man who has so little good taste as to erect a mechanic's workshop in such a place is much to be pitied. It is a sort of trafficking within the precincts of the Temple.

THE PYRAMIDS.

A LECTURE was given by Professor Goodman, of the Yorkshire College, at the opening of the winter session of the Keighley Association of Engineers on Saturday evening on "The Tools and Methods Used in Building the Pyramids." The lecturer gave a brief description of the manner in which the early Egyptian temples were oriented, so as to secure that the light of certain stars should fall on the altar once a year, and how the slight "wobbling" of the earth's axis threw in time the passages out of truth. The Pyramids seemed to have been used first as astronomical observatories and then as tombs, and great pains were taken to secure that their sides were to the cardinal points. The working and jointing of the stones were of the highest class, and proved the use of long metal saws and skill and patience in producing their marvellously accurate lines and plane surfaces, by methods similar to those followed now. Hardened bronze appeared to have been largely used in sawing and drilling. The inclined plane and wedging and rocking seemed adequate to account for the raising of these huge masses of masonry, given the unlimited supply of labour available in ancient Egypt, especially during the three months of Nile flood. There was little doubt that the Egyptians were acquainted with the lathe. The lecture was illustrated with lantern views.

GENERAL.

Mr. Hugh Blakiston, secretary of the National Trust for Places of Historic Interest or Natural Beauty, will lecture on the 18th inst. before the Birmingham Natural History and Philosophical Society, and describe the constitution and work of the trust. Mr. Blakiston suggests that local scientific and antiquarian bodies should compile registers of places of beauty or historic interest in their immediate neighbourhood, and it is largely in order to secure this being done that the trust has proposed its scheme of affiliation.

Mr. Walter Hanstock, architect, of Batley and Leeds, died in Harrogate on Saturday in his fifty-eighth year. He designed several buildings, and at the time of his death his firm—Messrs. W. Hanstock & Son—were busy with the plans for the proposed new Town Hall at Batley, which is to cost over 30,000*l*.

The Aberdeen Corporation will lend for the Glasgow Exhibition three portraits from the Town Hall, viz. Sir David Stewart, by Mr. Orchardson, R.A.; the Prince Consort, by John Philip, R.A.; and the Earl of Aberdeen, by Sir John Watson Gordon. Some antiquarian and other articles belonging to the Corporation will also be lent, and probably several pictures in the permanent collection at the Art Gallery.

The Cross discovered about sixty years ago in the walls of the Old Guildhall, Plympton St. Maurice, and removed to the churchyard, has just been restored and placed on the south side of the church, facing the old Grammar School, the birthplace of Sir Joshua Reynolds The shaft—a monolith 10 feet in height—is a fifteenth-century work. It was hewn out of stone that was freely used in the building of the two local churches, the Old Guildhall and the Old Priory. There is now an octagonal base of three steps, and a new top forms the arms. The total height of the erection is 15 feet.

The Town Council of Bournemouth have approved a plan for laying out new public gardens in the Alum Chine. It has also been decided to apply for powers to borrow 200,000*l*. to carry out a tramway scheme throughout the borough.

The Alfred Memorial at Winchester will, it is expected, be completed about next midsummer. The bronze statue of the king will be 14 feet and the granite pedestal over 20 feet in height, and will weigh 40 tons. The work will cost 6,500*l*.

M. Ballu, architect-in-chief to the Government of Algeria, delivered a lecture in the conference hall of the Paris Exhibition on "The Ruins of Timgad, the old Thamugadi."

Mr. Frederick Wheeler, F.R.I.B.A., of 6 Staple Inn, was commissioned by the Lord Mayor, Sir Alfred Newton Bart., to prepare a design for the bronze memorial tablet which is to be erected in the parish church of each member of the C.I.V. Regiment who has fallen in the South African Campaign, subject to the approval of the incumbents. The design having been approved, the work is now being carried out by the Coalbrookdale Company, Queen Victoria Street, E.C. Mr. Wheeler is an old member of the 20th Middlesex (Artists').

The Admiralty have decided to thoroughly remodel and improve the hospital in Haulbowline Dockyard, Queenstown. Several other alterations are contemplated.

A Deputation of the Nice municipal authorities visited Eastbourne on Saturday to inspect the sanitary arrangements of the borough, the most important being a new drainage system which has cost nearly 100,000*l*. The visitors included M. Genard, M. Balectre and M. Arnaud.

A New Museum at Winchester is about to be erected on the site of the old Butchers' Market and Mechanics' Institute, from the plans of Messrs. Colson, Farrow & Nisbett. The Council accepted the tender of Messrs. Fielder, of the city, at 6,025*l*., although three lower tenders were received.

The Archbishop of Canterbury, together with the Bishop of Rochester, dedicated on Tuesday the permanent buildings of St. Gabriel's College. A sum of over 40,000*l*. has already been expended on their erection. Mr. P. A. Robson is architect.

The New Gaiety Theatre, of which Mr. Ernest Runtz is architect, is expected to be ready by Christmas 1901. The lease will be for fifty years.

Mr. William Pryce Michell, of Holwell, Whitchurch, Devon, has bequeathed 1,000*l*. upon trust for the enlargement of the southern aisle of Whitchurch Church, and 1,000*l*. to the vicar and churchwardens of Whitchurch upon trust to apply the income for keeping in repair the vault., monuments and painted windows of the Scobell and Michell family.

Mr. Hubert Herkomer last week delivered two lectures in English in Hamburg on "England Lovable and Paintable" and "Portrait-Painting."

The Fund which was opened about four months ago in Birmingham in aid of the building trades gift to the nation has now been closed. The total amount subscribed was 525*l*., which is considerably more than has been contributed in any other provincial city or town. At the final meeting on Monday, over which Mr. F. G. Whittall (president of the Birmingham Master Builders' Association) presided, it was stated that the operatives had contributed nearly 200*l*. towards the sum realised. The homes, the chairman stated, were primarily intended for those disabled soldiers who had been formerly connected with the building trade, and would stand as a permanent memorial of the patriotism of those engaged in the building industry.

At a General Assembly of the Royal Society of British Artists, held on Tuesday evening, the following were elected members:—Mr. J. F. Darley, Mr. Fred E. Foottet, Mr. J. Eyre Macklin, Mr. W. Tatton White, and Mr. Fred Whitehead.

The Annual General Meeting of the Society of Architects will be held at St. James's Hall on the 25th inst. at 8 P.M., when the officers and council for the ensuing session will be elected. Sessional meetings will be held on November 22, December 13, January 24, February 21, March 21, April 25, May 23, October 24.

The Surveyors' Institution will hold the first ordinary general meeting of the session 1900-01 on Monday, November 12, when the president, Mr. John Shaw, will deliver an opening address.

The Winter Session of the Northern Architectural Association will begin on November 14, when Mr. W. Glover, president, will deliver an address.

Chatsworth Hall, which has just been erected in connection with the Rev. Archibald G. Brown's church at West Norwood, was opened on the 8th inst. The new hall and its allied rooms, &c., have been rendered necessary by the increase in the Sunday-school work of the church and the need of further accommodation for week-night meetings and other gatherings. The total cost will be about 5,500*l*.

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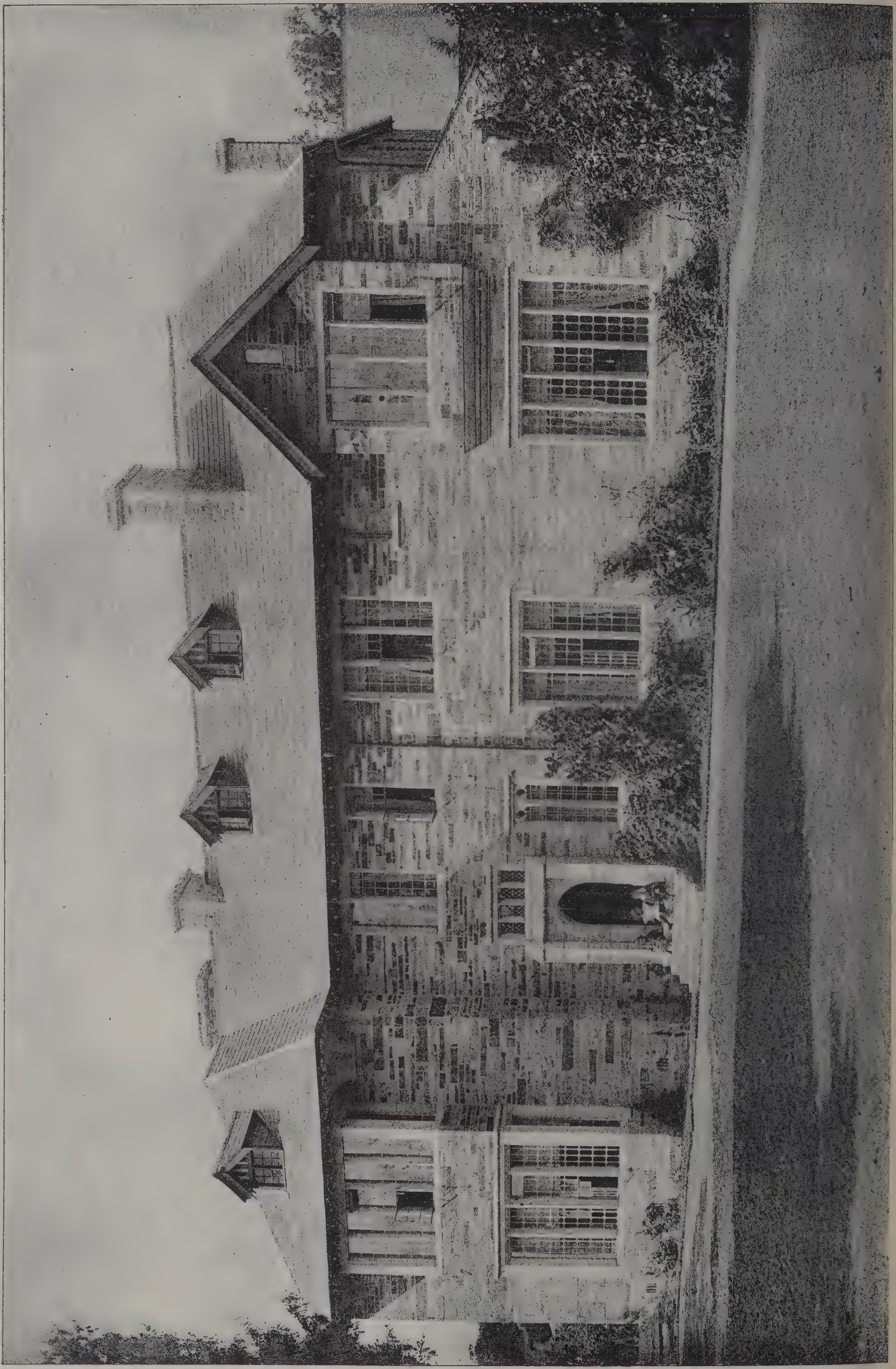
The Architect, Oct 12th 1900.



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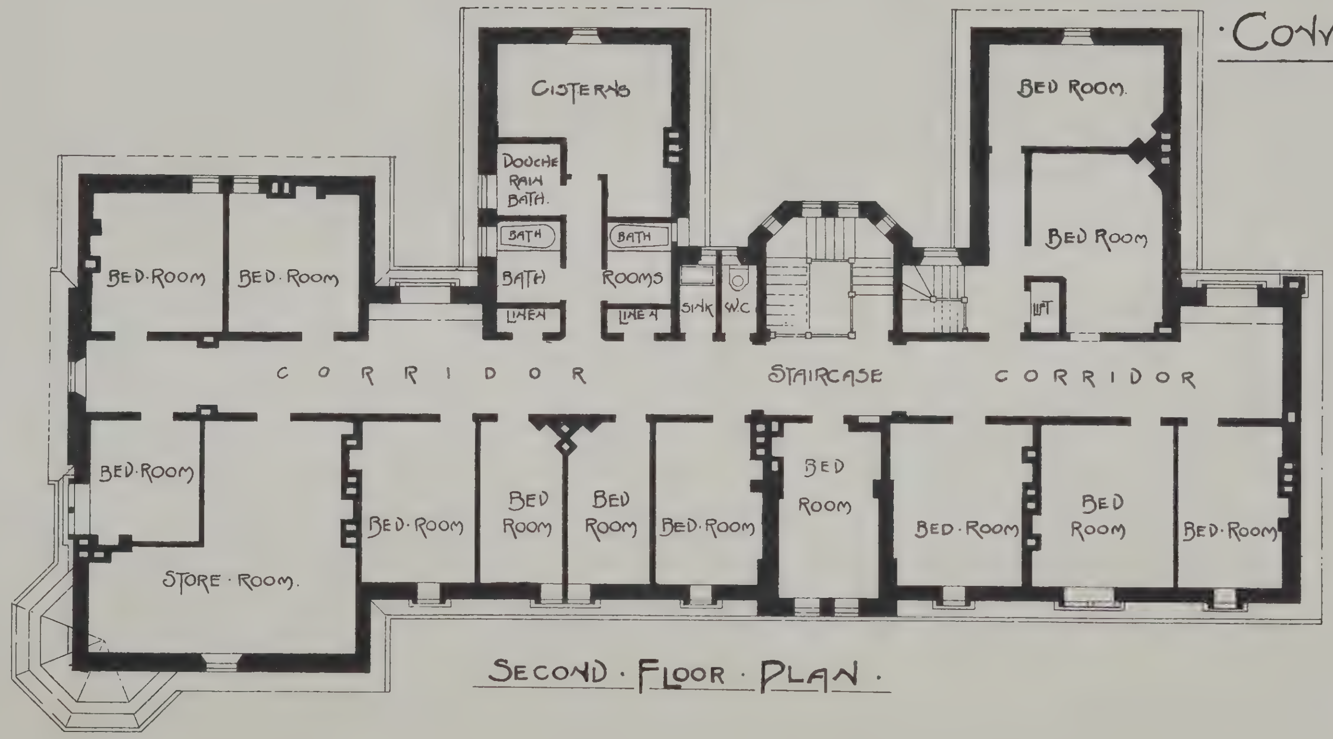

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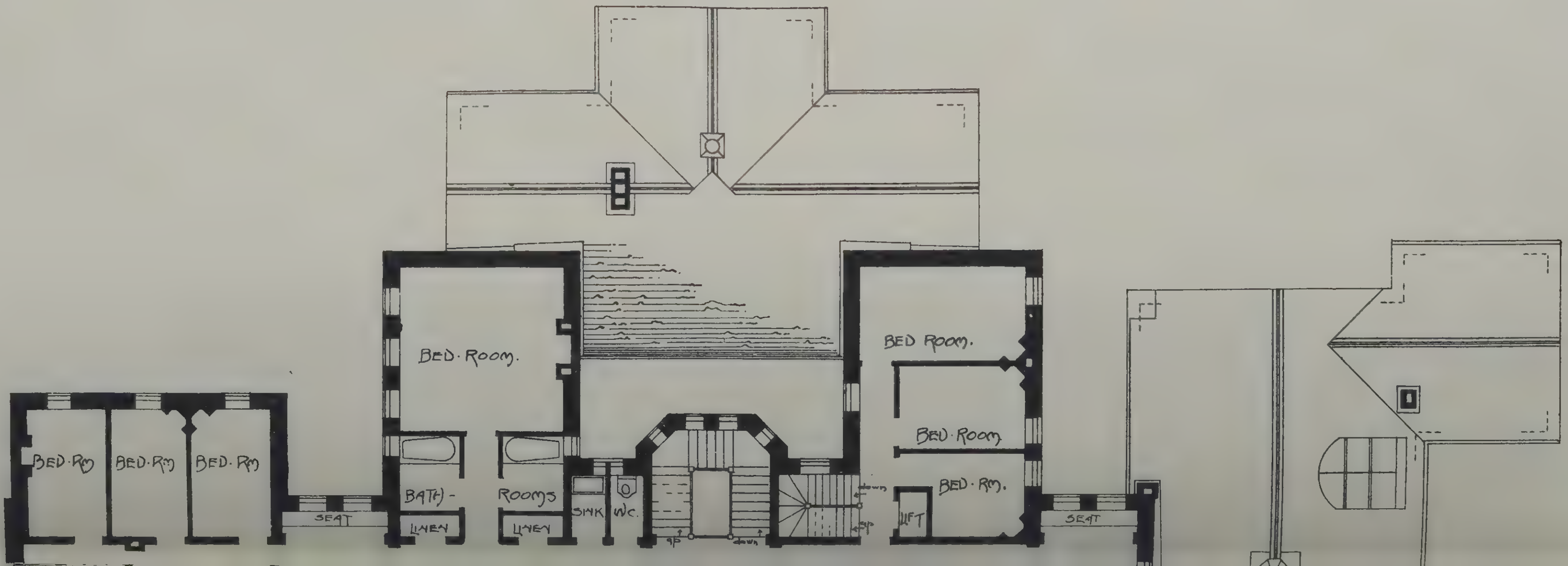

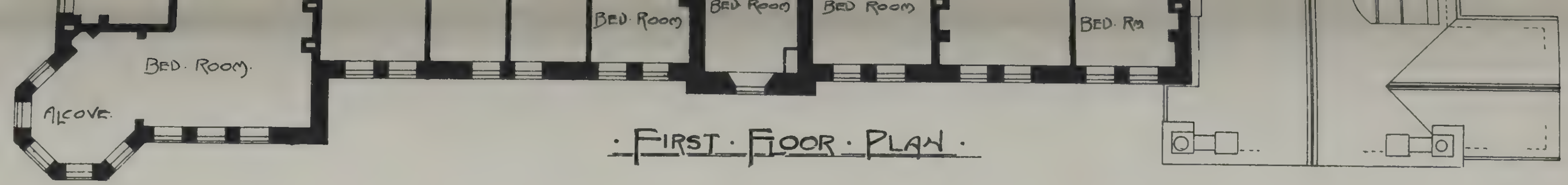

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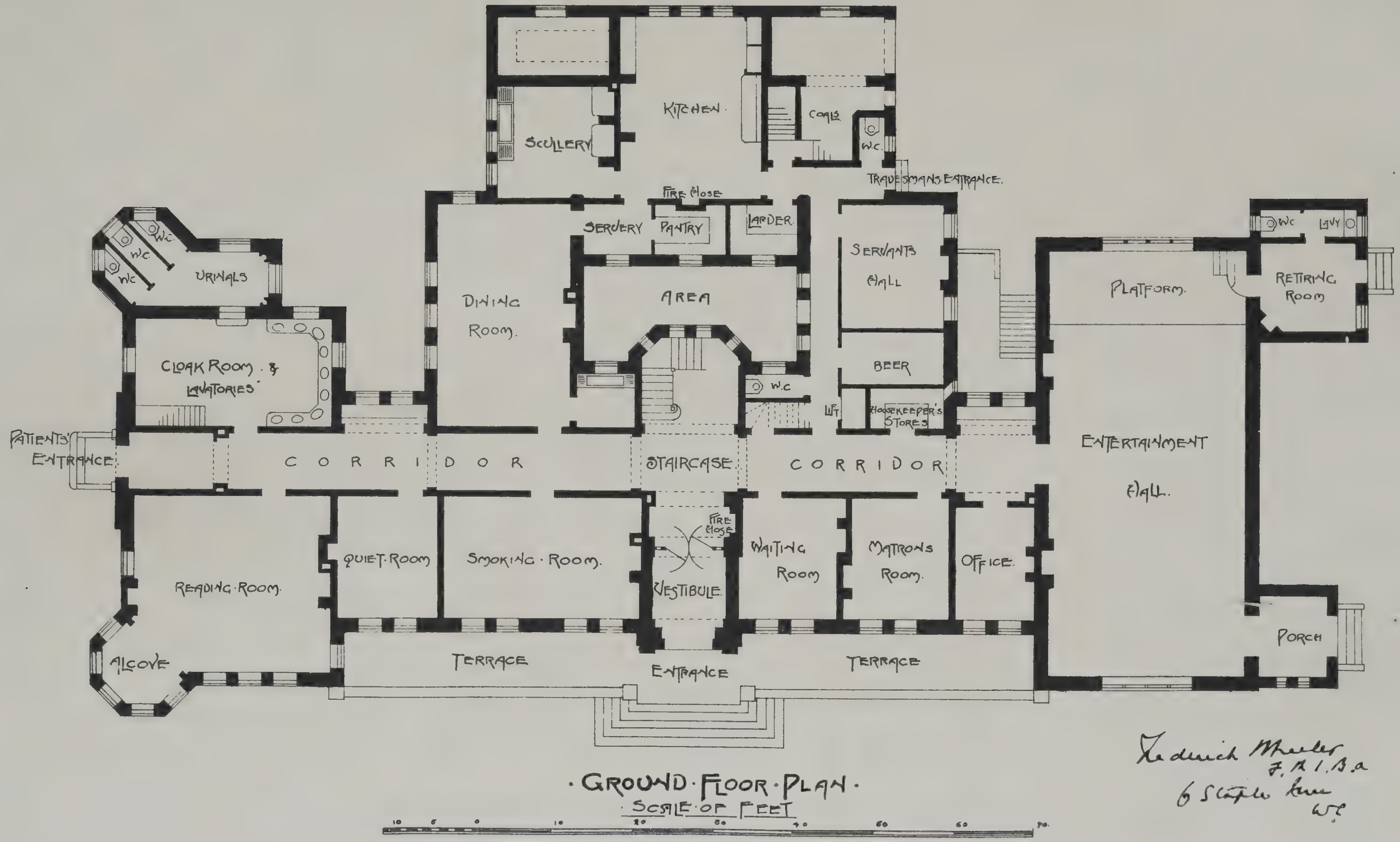

· GROUND · FLOOR · PLAN ·
· Scale of Feet

Frederick Wheeler
F.R.I.B.A.
6 Staple Inn
W.C.

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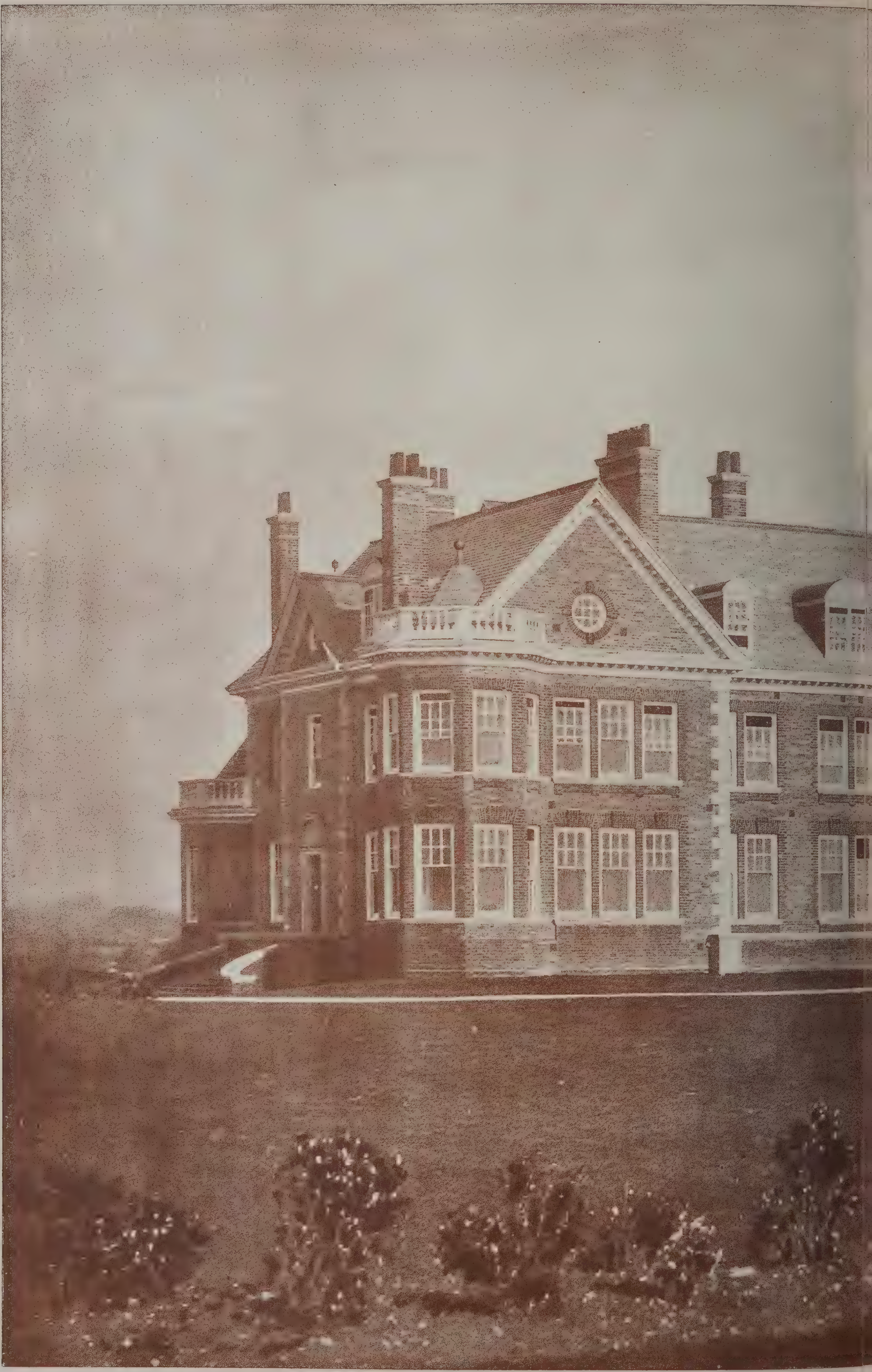

Convalescent HM

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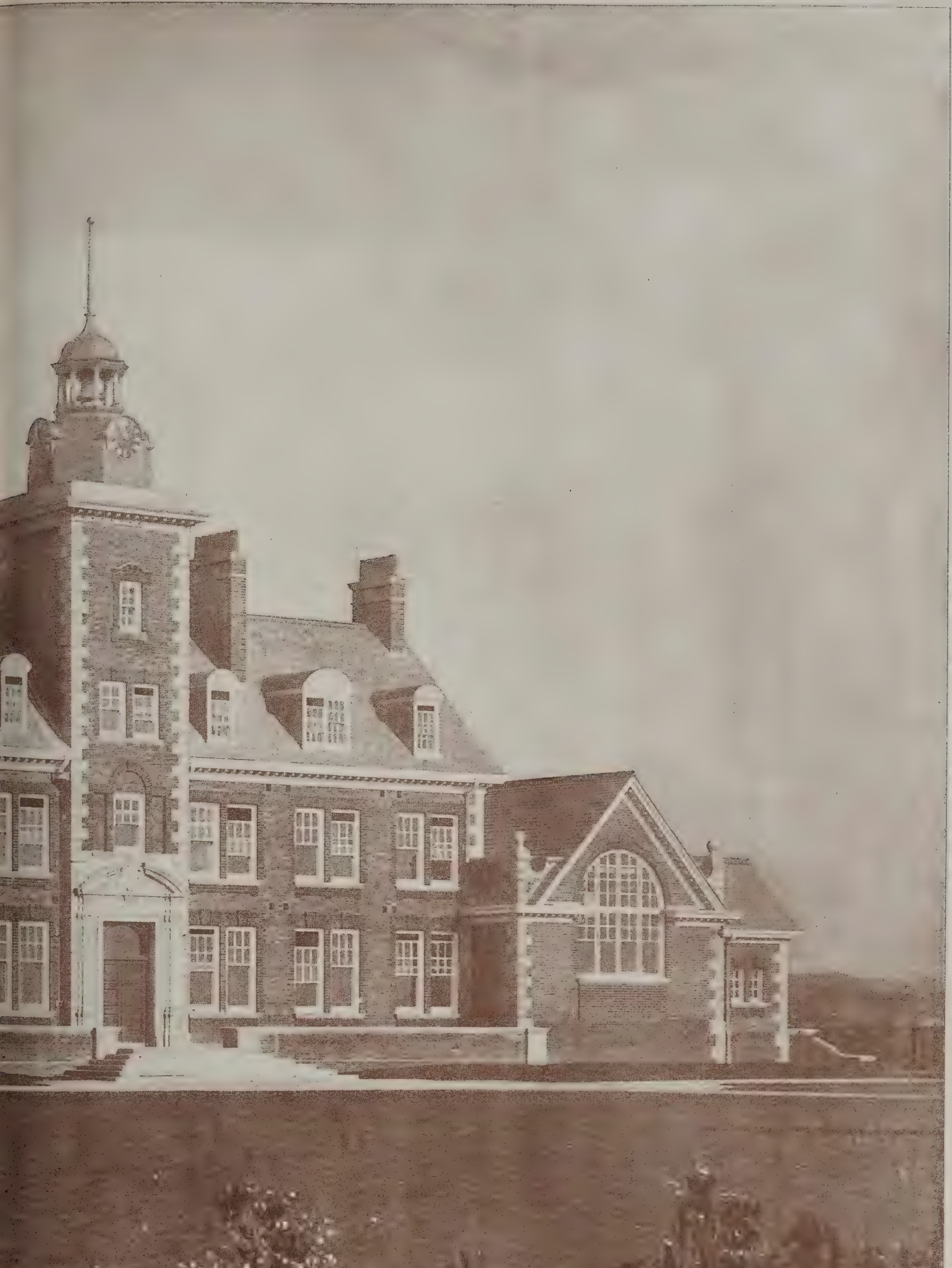

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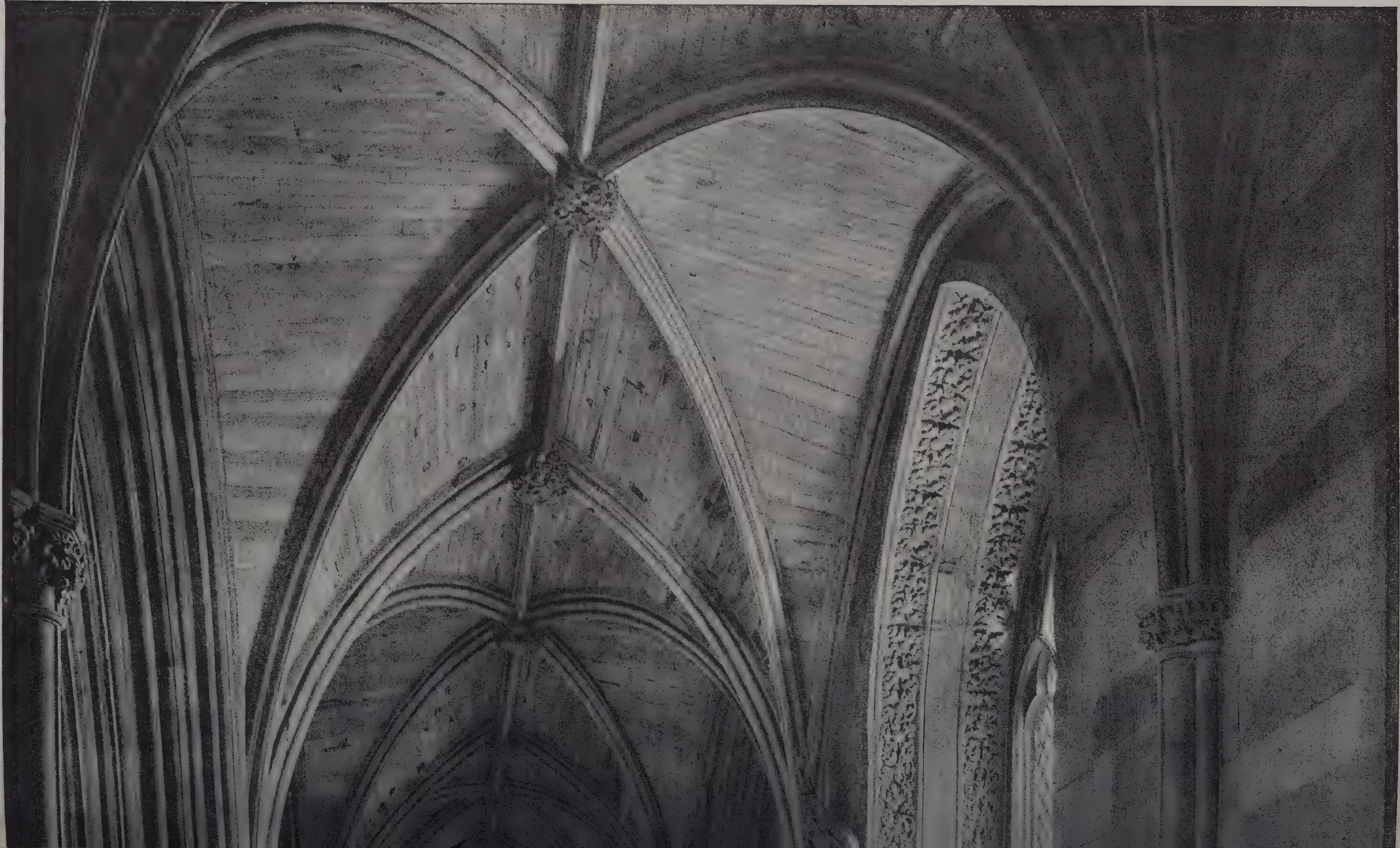
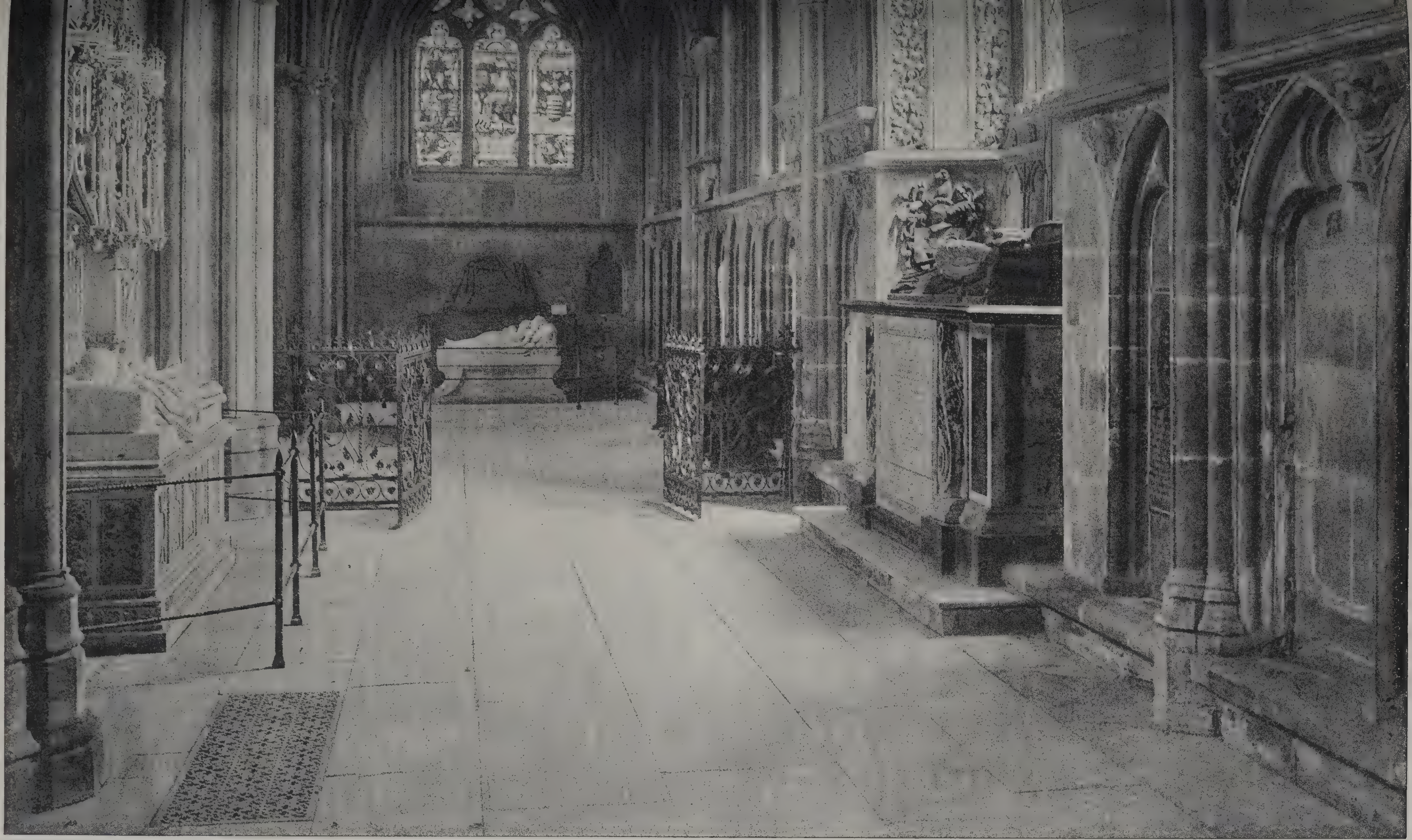
LEHAMPTON, SUSSEX.

R.I.B.A., Architect.

UNIVERSITY OF ILLINOIS

The Architect, Oct 12th 1900.





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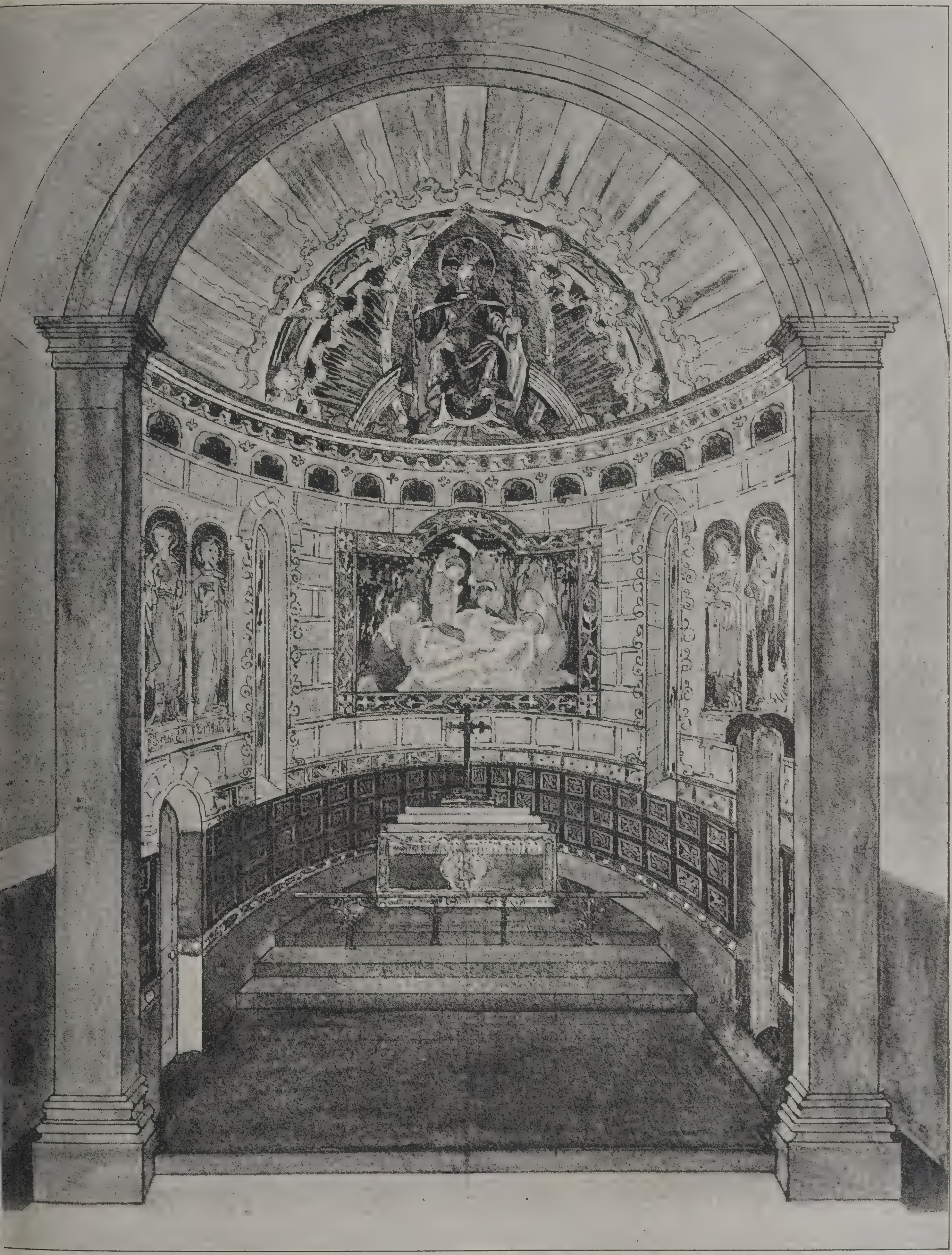
CATHEDRAL SERIES, No. 303.—LICHFIELD: SOUTH CHOIR AISLE.



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PROPOSED DECORATIONS AT ST. JAMES THE LESS, GUERNSEY.

ALFRED E. NIGHTINGALE, Architect.

The Architect.

THE WEEK.

Sir Henry Acland, Regius Professor of Medicine at Oxford, has not long survived his friend, John Ruskin, for he died on Tuesday evening in his eighty-fifth year. His death deserves to be recorded in an architectural journal for two reasons. In the first place, he gave the benefit of his great authority and influence to sanitation at a time when it was not considered to come within the purview of a physician. From 1869 to 1872 he was a constant attendant and member of the Royal Sanitary Commission. He presided over the public health section of the Social Science Congress, and he studied problems relating to public health in various parts of the world. His writings on sanitary subjects were accepted as authoritative, and the cause of sanitation had not a more influential or zealous supporter. Dr. Acland was also associated with an architectural experiment which was expected to bring about a revolution in the art. He may be considered as the originator of the Oxford Museum, which was accepted by a large class of men as the most remarkable architectural achievement of the time. Mr. Ruskin threw all his energy into the work, which in its ornament was to be representative of English vegetation and of which every part could find approval among Oxford logicians. He met with loyal co-operation from the architects, Messrs. Deane & Woodward. The museum excited more amusement than admiration, and Dr. Acland was made the subject of much good-humoured banter on account of his connection with it. John Ruskin believed he owed much to his friend, who convinced him on his coming to Oxford that there was another ideal of life besides that which prevailed at the puritanic house at Denmark Hill. He afterwards drew his mentor's character in words which are the best epitaph of Sir Henry Acland :—"In these yet boyish days his judgment was unerring, his aims determined, his powers developed; and had he not, as time went on, been bound to the routine of professional work and satisfied in the serenity, not to say arrested by the interests, of a beautiful home life, it is no use thinking or saying what he might have been; those who know him best are the most thankful that he is what he is."

At the meeting of the London County Council on Tuesday the following resolution was adopted :—"(*a*) That the estimate of 50*l.* submitted by the finance committee be approved, and that the improvements committee be authorised to take all necessary steps for the exhibition at the gallery of the Royal Society of Painters in Water-colours, at No. 5a Pall Mall East, of the suggested designs for the elevations of the buildings proposed to be erected, fronting on the Strand and on the crescent road to be formed between Wellington Street and Clement's Inn, the terms and conditions of the exhibition being those stated in the foregoing report of the committee. (*b*) That the estimate of 52*l.* 10*s.* submitted by the finance committee be approved, and that the improvements committee be authorised to incur an expenditure not exceeding 52*l.* 10*s.* in obtaining expert advice upon the designs in question." Many of our readers will be struck with the proposal to expend 52*l.* 10*s.* on advice. But we suppose assessors have become so plentiful they must submit to the law of supply and demand. It is understood that from the 25th inst. the designs will be open to the inspection of members of the Council and other people who have received special invitations, while during the week commencing on the 29th the designs can be seen by the public without any charge.

Although it is sometimes allowed in connection with foreign exhibitions that decorations should be conferred on various Englishmen, there are apparently no available means to reciprocate the favour. The action of the Emperor of Germany makes the English custom of indifference more remarkable. His Majesty has conferred distinctions on several Frenchmen who in various ways have aided the German section of the International Exhibition. Among the artists are M. Bouvard, the director of the services of architecture, who with M. Henry Roujon, director of fine arts, have been appointed grand officers of the Red Eagle. M. L. Bonier, another architect, receives the cross of officer of the Red Eagle. M. Edouard Detaille, the military painter, who has from time to time produced war pictures in which the German invaders of 1870 do not appear attractive heroes, becomes a grand officer of the Order of the Crown. In all no less than seventeen Frenchmen have attained German rank. There will be doubtless a corresponding number of nominations of Germans to the Legion of Honour. It is very doubtful whether one foreign artist or official of the French Exhibition will receive any return from England for any services which have been given to the English section.

The loss of Mr. Joseph Goddard, architect, will be felt by Leicester in several ways. He inherited the business of his father and teacher, Henry Goddard, and long held the most prominent position in the district as an architect. One of his partners was Mr. A. H. Paget. The business was progressive, and many of the principal buildings in Leicester were designed by the firm. Indeed, one of the magistrates in publicly referring to the architect's death, said that Mr. Goddard left a deep impression on the town, which had been very much beautified by his artistic taste. It was the pride of the inhabitants and the admiration of strangers to see the change which had taken place during the last thirty or forty years in the architecture of Leicester. The Mayor of Leicester on the same occasion said :—"Mr. Joseph Goddard had held the position of magistrate for some years. He had diligently served the town in this capacity, had always shown the greatest interest in all the affairs of the borough, and in the administration of justice had shown a deep spirit of mercy as well as justice. They regretted exceedingly his sudden demise, and expressed their condolence with the widow and family." Mr. Goddard, we regret to say, died suddenly on the night of Wednesday in last week at his residence, the Manor House, Newton Harcourt. He had shown no symptoms of indisposition during the day, and as late as half-past four in the afternoon was at his office in Market Street. A little later he returned to Newton Harcourt, and between eight and nine o'clock in the evening he had a sudden seizure, and rapidly became unconscious. Medical aid was at once summoned, but in spite of all that could be done Mr. Goddard expired without recovering consciousness.

The opening meeting of the session of the Royal Institute of British Architects will be on November 5, when the president, Mr. Emerson, will deliver an address. Professor Lanciani will on November 12 describe "The Architectural Results of the Latest Excavation in the Forum at Rome." On December 17 Mr. Beresford Pite will read a paper on "Some Tendencies of the Modern School of Architecture." The drawings submitted for the Institute prizes will be on exhibition at the Alpine Club from January 15–26, 1901. Mr. J. J. Stevenson will read a paper on January 21, entitled "Difficulties and Hindrances in producing Good Modern Architecture." The Presidential Address to students will be delivered on Feb. 4. On Feb. 18 there will be a novelty in hearing a paper relating to building, for Mr. G. T. Hine, who has had more experience in the class of subject than most architects, will describe "The Construction of Lunatic Asylums." The remaining papers to be read are "The Art of Pictorial Mosaic," by Mr. C. H. Townshend, on March 18; "The Classification of Romanesque and Classic Architecture," by Mr. Francis Bond, on April 1; and "The Sources and Growth of Architecture in Egypt," by Professor Flinders Petrie, on May 20. The gold medal will be presented on June 17.

PARTIES IN ARCHITECTURE.

(By a Correspondent.)

THE results of the General Election are so far determined it is now only a question of the difference in units between the Government majority in the old Parliament and the new. There are substantial reasons for satisfaction with the triumph of the party that will retain office for a time that now appears to be indefinite. It is not, however, to be denied that the new conditions may not be favourable to Parliamentary government as an institution. No matter to what party they belong, whether in religion or in politics, men do not cease to be weak in themselves, and confidence in their own superiority or infallibility cannot exempt them from the frailty to which the human race is always liable. Thinkers who are proud of the English Constitution at the present moment consider that the numerical difference between the two parties which has been produced by the late elections should be considered as one of the worst crimes of the Liberal party. For by their conduct in past years, when they possessed a monopoly of power, they have caused a revulsion among Englishmen which has led to indifference to that balance of parties which in the eyes of foreigners was the privilege of this country alone. Mass and inertia are in a popular sense synonymous terms, and it is not to be expected that a Government which must be supreme in all divisions will care about either offending or pleasing what is called public opinion. We then have absolutism in its worst form. On the other hand, when an opposition is assured that supreme efforts must end in ignominious defeats they will not be incited to offer attacks, for the fate of a forlorn hope is not always attractive. It is not our desire, however, to consider political questions unless as abstractions, and if we refer to the present state of affairs it is for another purpose.

It would not, we suppose, be contraverted that during several years the power of party has been unknown among English architects. Opposition has become atrophied. But that is only a result of success. The earlier Gothicists held a position that was comparable to that of the extremest party of Radicals in politics. Some sixty years ago Pugin II. startled friends and foes by his language against the men who then controlled architecture in a lymphatic manner. Indeed, it would not be difficult by a very slight change to convert his attacks into harangues for political meetings. Thus, when describing the churches of the religion he professed, he exclaimed:—"What sums are laid out in miserable imitations of marbling, bad paintings, brittle plaster ornaments and peeling stucco and cement, and all from a pretended principle of economy! We are positively without one ecclesiastical building in the Metropolis itself where the rites of the Church can be performed in a solemn manner. There is Moorfields like a theatre, with its proscenium and boxes; Warwick Street a concert-room, in every sense of the word an abomination; Lincoln's Inn Fields dark and grated like a chapel for convicts. The rest dirty, unsightly, conventicle-looking buildings. The principal attraction held out to induce attendance is to hear a set of dissipated musicians taken from the theatre and the ballroom—drowsy from their last night's orgies, whence they have come to sing lauds to that God whose faith they deny, and whose commands they daily outrage by their conduct. My heart sickens to think and speak of these things." If the clergy were the inspirers of such parodies of architecture they found ready agents in the architects. Pugin described those who in directories and other publications were classed with himself as "men for the most part utterly despicable, who venture to profess a noble art for the sole purpose of prostituting and degrading it to their own private interests, and they have so far succeeded that, while immense fortunes have been amassed, their very name has almost become a reproach: men without one particle of soul or feeling, except the hope of gain or the fear of loss. They proceed to design a church, a poor-house or a tavern in the same business sort of manner."

In these weak days when decorum prevails such outspoken language as Pugin's would only excite momentary consternation. But we know, for he has himself recorded the fact, that Gilbert Scott, who, with his partner Moffat, then possessed a monopoly of the poor-houses, and would undertake all other classes of building in a similar spirit, was moved by Pugin's words. His soul's awakening is to be attributed to the vehement author of the "Contrasts," and his new ambition was to become a more politic representative of true principles. Other disciples followed, and the class of architects who were supposed to be inspired by their own private interests had to succumb to a new race who were accepted as being untainted, and as having no hope of gain or fear of loss in carrying out their commissions.

Two parties came into existence, and it was a struggle between them. Nowadays those who look back on that warlike time will admit that not only was Gothic architecture revived and realised with a completeness that Mediæval architects, if they could revisit England, would not hesitate to acknowledge, but the varieties of Classic or Italian architecture were also expressed in a spirit that was almost unknown some years before. The subsidiary arts were also encouraged, and it would seem as if the general combativeness brought latent powers to light and encouraged Englishmen to believe they were not so ill-adapted to be artists as they had been taught to believe. The history of the Gothic Revival in its various manifestations would describe a period and performances which were unique in England. Those who took part in it might be described as wolfish, untamed, without sense of measure or consideration for men who ventured to differ from them. But there could be no apathy, for even the zealots of Gothic were as ready to fall upon one another as upon classicists.

When the leaders, however, passed away there was a change. It was found that enthusiasm for Gothic was not always sufficient to allure clients and to fill purses. Then a reaction brought with it indifference. When it was said that the only true Gothic that was in keeping with the civilisation of a later age was the Perpendicular variety there was almost general acquiescence. If good people were convinced of the merits of Perpendicular, and were willing to build churches in which it would be manifested, why should architects, who had increased in numbers through the Gothic Revival, accept neglect with its accompanying misfortunes for the sake of Early English or Decorated? Then again, when the system of restoration which had been so extensively employed was condemned, there was almost general satisfaction, and it would be increased if the lovers of old churches who possessed the requisite funds decided to bring back the buildings to a more simple state. Apologies for incongruities were accepted without hesitation, and the ideal English church was supposed to be one which exemplified all the varieties of bad taste which were perpetrated in them from the time of the Reformation.

With regard to new work it must be said the state of architecture has corresponded with the political state as manifested in the House of Commons. Just as members found it was far more agreeable to enjoy the social advantages which the Constitution provided for them, and to prefer sauntering and tea-parties on the Terrace to imitation of the great Walpolean battles until party lines had ceased to be defined, so in architecture there was hesitation to be ranged under the banners of any one style, and as a consequence we have reached a condition in which principles have ceased to be applicable. Nobody could now say what is the standard of architecture, where it is to be found, or by whom it is exemplified. If lapses are apparent in a building they are accepted as inevitable, for it is recognised that to bear and forbear should be taken as good policy; for who can say that his own work is impeccable?

In an ethical sense such accommodating arrangements have their advantage. Experience proves that the time spent in attempts at architectural reform is not always well repaid. But when there is so much laxity we cannot expect that architecture will be produced which will sustain the tests which come with an increase of knowledge. In the arts as in other fields we know it is possible to have peace if we are indifferent to solitude, and in architecture we have prosperous practitioners because clients are not distracted about deciding on the relative merits of styles. New work is now so much of a class that even the reporter when he has to write a puff of a building is unable to define the style, and apparently is doubtful whether it has not several.

It will be said the indefinite Renaissance which now prevails, and which is more eclectic than any of the old eclecticisms, is a style which corresponds with the spirit of the age. When we have Conservative Unionists and Liberal Unionists, Imperial Conservative Unionists and Imperial Liberal Unionists, on the same benches and habitually in the same division lobby, it is not to be expected, we suppose, that the shades of difference between their politics can be analysed. In the same way, who is to separate the elements of a modern building, which may be drawn from Dutch, German, French and English buildings? What is worse, there is no assurance that modern design will be confined to those sources. There is at present an immense building in course of erection at Westminster; should it be approved we may expect to see Byzantine elements introduced to supplement English Renaissance details. But all this adapting is license rather than liberty. It cannot be codified or formed into a system. Now, as we know from what took place in the Gothic Revival, however individuals might differ, they all insisted on having articles of faith which could be expressed as formulas, and obeyed as if they were commandments. They had their standards of excellence in particular buildings, and they were as faithful to them as lawyers would be to the decisions of early judges. The divisions between architects mainly arose from the selection of standards, and the relative importance which was to be attached to each of them; the disputes were, therefore, evidence of efforts to impart unity to modern Gothic.

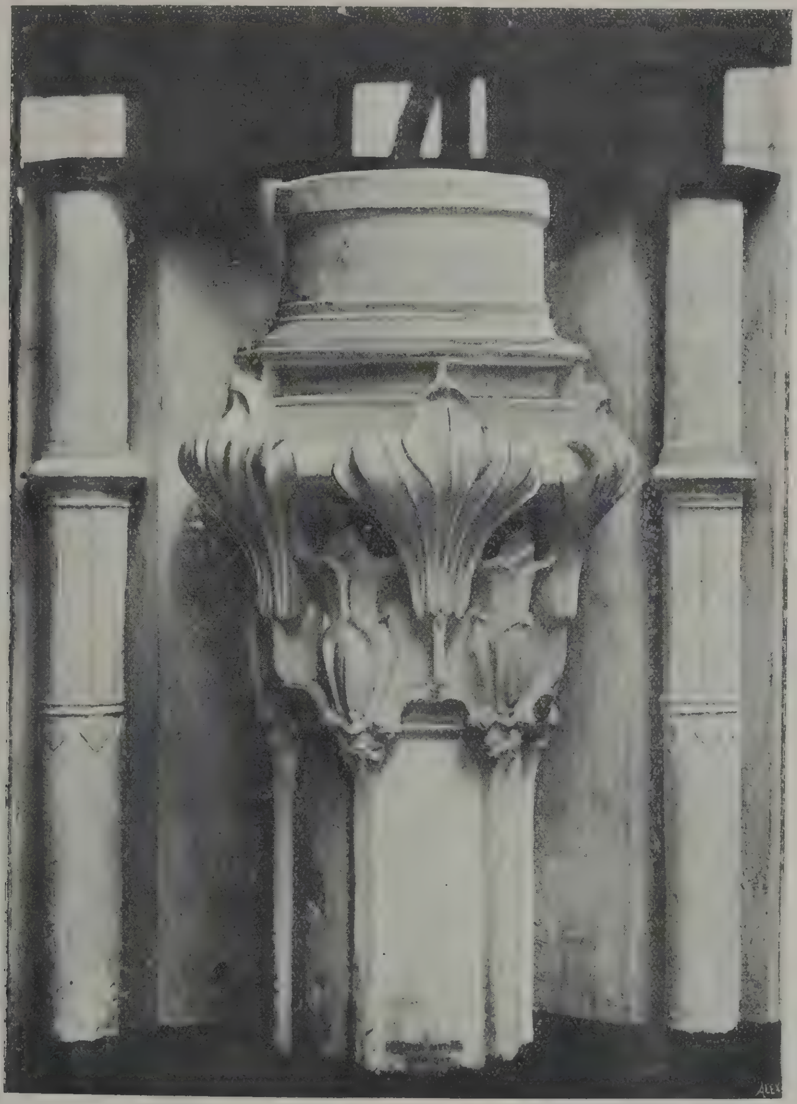

Fig. 1.—Modelled Design for Capital, by Mr. Joseph Else (*Silver Medal*).

It is impossible to have parties on any other terms, and the absence of them in the practice of English architecture is a sign of weakness rather than of strength. This is shown by experience in other places and ages. The disputes between Italian artists, which were often carried to bloodshed, were known to arise out of controversies over one master's works. The long warfare between classicists and romanticists in France was based on precise grounds. One phase of it, that between the disciples of Ingres and Delacroix, had for aim the decision whether form or colour was to be supreme in painting; just as in Germany many books were written in the fierce struggle to uphold Northern against Southern myths, or Siegfried against Achilles. As it would not be easy to select any one principle in modern English architecture which is worth fighting for, we suppose we cannot imitate Italians, Frenchmen, and Germans, and must go on for an interminable period without the invigorating exercise of party warfare, which in all times has helped to make a living art.

STUDENTS' WORK AT SOUTH KENSINGTON.

A KEEN observer passing along Exhibition Road, Kensington, a short time ago might have noticed a narrow opening between the ramshackle post office and a galvanised iron building, and closer investigation revealed the existence of a diminutive card there indicating that an exhibition of students' work was in progress somewhere in the neighbourhood. This fact ascertained, the next thing was to get to it, which was only to be managed by

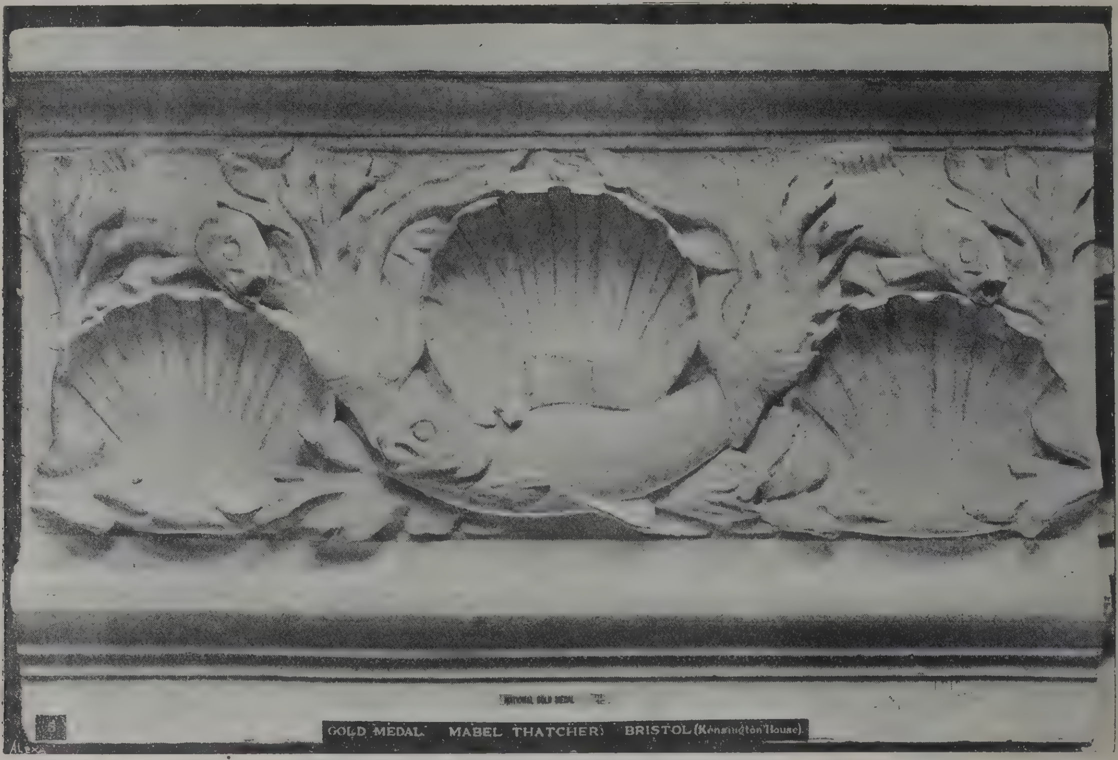
NATIONAL GOLD MEDAL
GOLD MEDAL MABEL THATCHER BRISTOL (Kensington House)

Fig. 2.—Modelled Design for Frieze, by Miss Mabel Thatcher (*Gold Medal*).

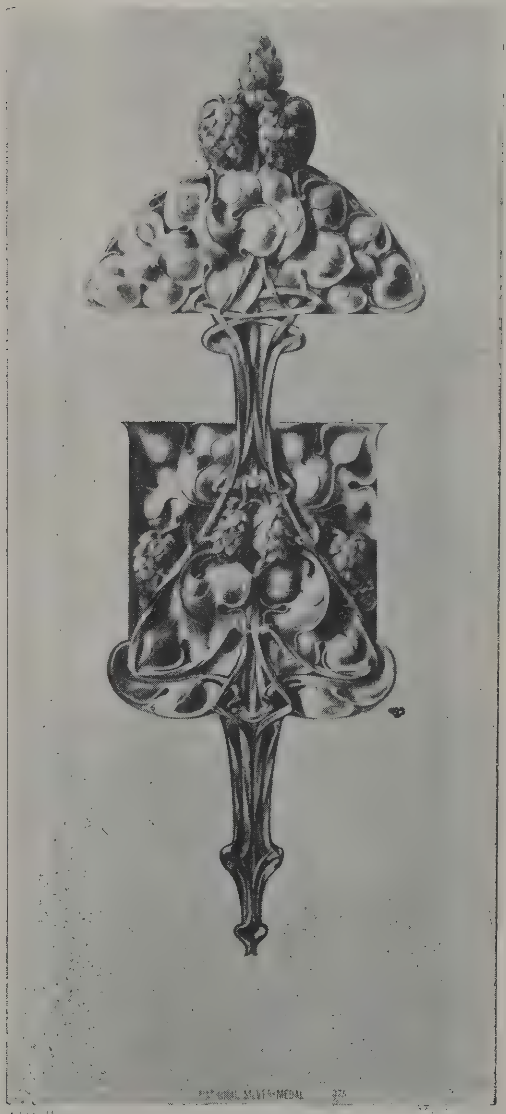

Fig. 3.—Book Board End, by Mr. W. H. Wilkinson (*Silver Medal*).

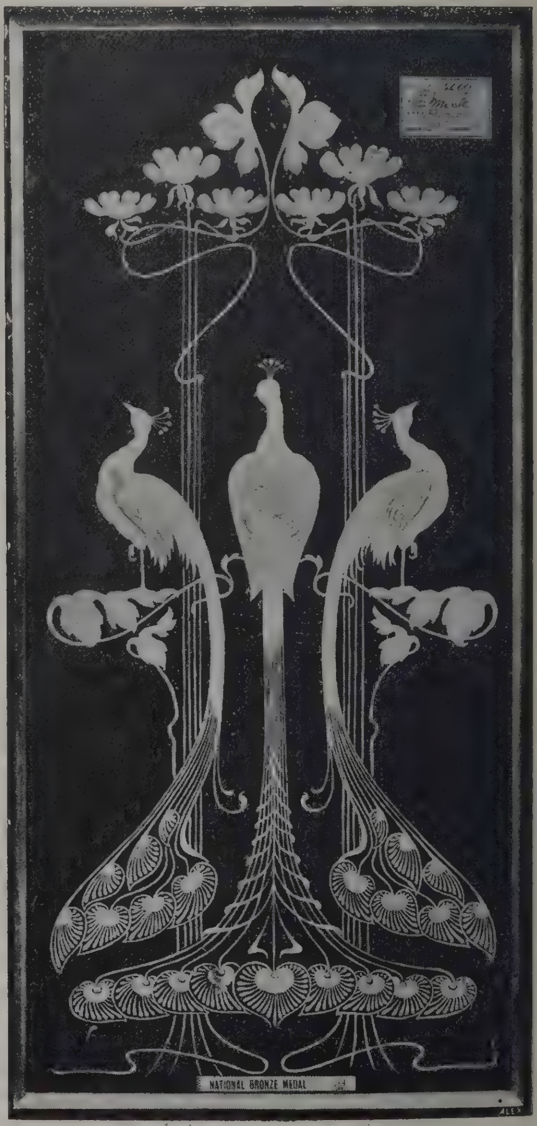

Fig. 4.—Gesso Panel for Fire Screen, by Mr. A. V. Monk (*Bronze Medal*).

picking one's way carefully for a hundred yards or so amidst heaps of rubbish, bricks, dismembered machinery, uncanny and disconcerting remnants of old casts and various other interesting odds-and-ends too numerous and varied to specify. It was under such conditions that the public were invited to inspect the selected works of Schools of Science and Art and Art Classes sent in for national competition this year, and if the display was not extensively patronised who can wonder? The arrangements were unsatisfactory enough last year, in all conscience; but this time the official record, bad as it was, for hiding the light of the students under a bushel was easily beaten; indeed, one felt almost inclined to suggest that search parties should be in readiness to follow in the track of those who were sufficiently courageous to brave the difficulties referred to above.

In judging the work shown it is essential to bear in mind the influences under which it is produced, and to remember that many of the students strive to please certain examiners whose views upon art are—well, to say the least, peculiar.

Of thirty-two examiners who are entrusted with determining the value of the works, no less than nine are members of the "Arts and Crafts" Society. Granted, they are clever, some of them very clever men, in their own special groove, but that groove is a painfully narrow one, and they are intolerant of anything outside it. If students do not pander to their particular fads and fancies they know full well that the highest awards will certainly not fall to their share, and the result is "convolutions of flames and entrails," with "swirls" and "blobs of colour." It naturally follows, then, that much of the best work receives a bronze medal or a book prize—if it is so fortunate as to be recognised at all—while the higher awards find their way to those students who are content to burn the candle to "the Society." We can hope for nothing better until radical changes are made at headquarters, but who is to make them it puzzles the wit of man to say. The question is far too extensive a one to be fully discussed in this connection, and we must now turn to the consideration of the few examples of work illustrating these notes.

In the last competition Mr. Joseph Else, of Nottingham, was successful with an admirable design for a bandstand, and this year he has been more ambitious with a "Modelled Design for a Hospital Doorway," which is a thoughtful and praiseworthy attempt, better, however, in detail than considered as a whole. Fig. 1 will give some idea of the lines this artist is cultivating, and is sufficient to induce one to look for future work from him with pleasant anticipation. Another modelled design, which gained the highest possible award—a frieze by Miss Mabel Thatcher, of Bristol—is illustrated in fig. 2, and reveals a nice appreciation of form and considerable skill in disposition of detail. Mr. W. H. Wilkinson, in presenting his design for a book-board end (fig. 3), not only gave his ideas in black-and white, but adopted the admirable plan of showing them actually carried out in the material for which they were conceived, and the silver medal which fell to his share was well won. Instead of falling back upon the time-honoured acanthus or other familiar detail for inspiration, Mr. Wilkinson has gone into the hop-garden to learn a lesson there, and turned it to exceptionally good account.

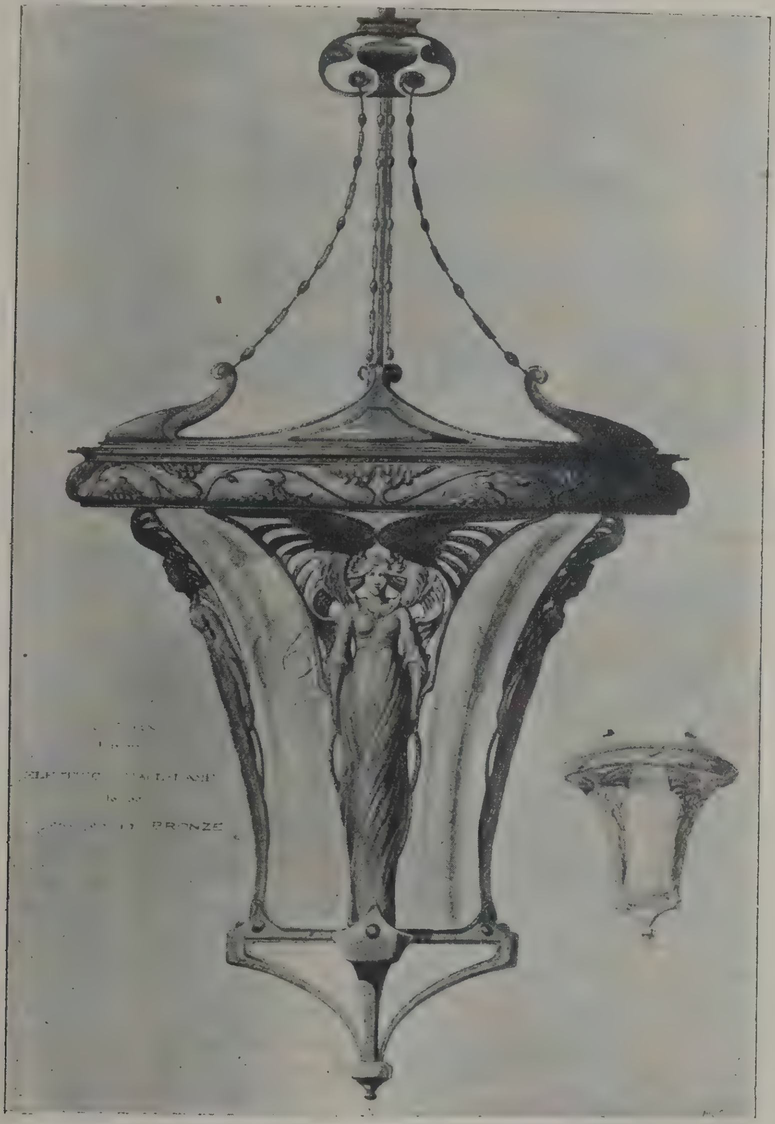

Fig. 5.—Design for an Electric Hall Lamp, by Miss Amy E. Squibb (*Bronze Medal*).

If a greater number of other students followed his example it would be better for all concerned.

The gesso panel (fig. 4), by Mr. A. V. Monk, is tasteful in conception, and the limitations of the method of decoration chosen are well observed, while, in quite another branch of design, Miss Amy E. Squibb's electric hall lamp is full of promise. Notable among other works which we are not in a position to illustrate were a stencilled ship-and-tree frieze, by Mr. John A. Cheil; a simple and refined scheme of bedroom furnishing, by Mr. A. H. Baxter; a series of tiles, vigorous in design and colouring, by Miss Lilian Arthur; a wardrobe, by Mr. Thos. Batty; a modelled door panel, by Mr. Edwin R. Phillips, poetic in conception, and deserving of a higher award than it secured; a bedroom, by Mr. Edward Walker; an exceptionally clever stencilled frieze, by Miss Jessie Gavin; and a wall fountain, by Mr. H. Miller.

"COLONIAL" ARCHITECTURE IN AMERICA.*

GOETHE must have been in a desponding mood, which overcame his habitual cheerfulness, when he complained of the imitation of his countrymen, which was without any advantage to himself, and lamented that his world-wide fame brought him no profit. Even the painting on plates of scenes from "Werther" by Chinese artists could not help him in Germany. A querulous complaint of that kind was unworthy of so serene a man. If reckoned by dollars, there was no gain to Goethe when others derived inspiration from his works. But no true poets or artists can be insensible to the subtle flattery which is offered by imitation. Nations can be pleased under like conditions. An English architect must have an emotion of pleasure when he looks cn a collection of representations of American work in the eighteenth century. In England we have grown so accustomed to hear that architectural power had vanished at an earlier period from among us, and that the eighteenth century produced only weak imitations of foreign works, it is gratifying to know that when the colonists had escaped from insular prejudices they were still quite content to reproduce the forms of English buildings as well as the decorations. It is also a compliment to us when we perceive that the phrase "colonial" architecture is generally accepted in the United States to designate some of their most interesting buildings. The numerous contests over titles for Gothic periods suggest the difficulty of finding a term that is both appropriate and acceptable. By adopting "colonial" the Americans have shown good sense and also praiseworthy willingness to record their old associations with England.

It is needless to say there were colonial houses in America prior to the coming of the first of the Georges. The emigrants who crossed the Atlantic in the *Mayflower* and the companion vessel met too many cares to think of beautiful architecture for a long period. The descriptions which Hawthorne gave in the "Scarlet Letter" and other of his books will show how simple were the structures of the Pilgrim Fathers and their immediate descendants. He is said to have been incorrect if we test his sketches in words by photographs, but the impressions he makes will not appear, in England at least, to be unsupported by the remains of the simple and primitive buildings. There was an abundance of timber in New England, and a log-house offered the easiest and most expeditious form of utilising it. We learn that "Mr. C. W. Ernst has recently discovered satisfactory evidence that the very first work of the settlers was to set up saw-mills, that they might get out the lumber in the sizes and shapes which they were wont to handle at home." No doubt the houses were for a long time very rough in their arrangements. Bricks had to be imported from England until about 1680. Glass was not to be obtained prior to 1700. In Guildford, Conn., there is a stone house of two storeys which was built in 1639, but as it was employed as a place of refuge from the Indians and for public worship, it was more than an ordinary residence. The Red Horse Inn, Sudbury, dates from 1680, and has literary interest, for it was there Longfellow supposed his "Tales of a Wayside Inn" were related.

When apprehensions of Indian attacks were diminished more attention was given to the style of the buildings. The inhabitants were able to barter with them instead of shooting them, and trade on a profitable scale was carried on with England. Mr. Cervin tells us:—

> The peace and commercial prosperity which set in about 1730 stimulated building activity. The shrewder merchants having amassed considerable fortunes by traffic in slaves, lumber, fish, tea and English stuffs, set themselves to the pleasing task of spending their gains. What better could they do than to erect commodious houses? Some professional men and some landed proprietors too had become wealthy, and vied with these merchants in their building enterprises. The ordinary material was wood—that is, houses were constructed of an open framework of timber covered with clapboards, or sometimes with shingles. Brick was rarely employed except in the larger towns.

Over so large a territory as the American colonies it was not to be expected that uniformity would be inevitable in the manner of building. The home architecture was interpreted in the same way as the British Constitution, and although the essential spirit everywhere was alike, there was a variety in the details. The cottage type was long preserved in New England, the only departure from simplicity being found in the architectural character imparted to the doorway. Gambrel roofs were also common. There was much to be seen in the houses to testify that the designer was a carpenter, for the woodwork sometimes attains an elaboration recalling contemporary work in England. Masonry was not obtainable without difficulty, and the timber was sometimes arranged to imitate walling or dressings in stone. The associations with the primitive log-house were not as appreciated as they would be in a more philosophic time. It is supposed that at one period Venetian red was largely employed to suggest brick from a distance. Within doors the carpenter had a more legitimate field for the exercise of novelty, and newels, balustrading and door-framing will compare with any English work of the time.

The Puritan emigrants were not partial to the use of the word church, and their meeting-houses could not claim much relationship with the ecclesiastical architecture of Europe. But the influence of Wren, Gibbs and other architects of that age extended over the Atlantic. The barrel-vaulting of St. James's, Piccadilly, is imitated in Christ Church, Boston; and the roof of King's Chapel in the same city recalls St. Martin's-in-the-Fields. It is worth noting that the lofty spire of Trinity Church, Rhode Island, is still surmounted by an English crown.

New York in the middle of the eighteenth century must have been an interesting town, for the Dutchmen were able to follow their own types of building. But as Mr. R. G. White says, "Old New York has been swept out of existence by the great tidal wave of its own material prosperity." The Dutch authorities were tolerant, and the settlers from many lands might build as they please; but as well as can be made out, however fond a Dutchman might be of a cottage on one floor, he had an aversion to the log cabin. It is remarkable, however, that New England was not without its influence on New York, and especially on the larger mansions. In one of the Van Rensselaer houses it caused the sacrifice of a high roof.

Another city and district which shows peculiarities i Pennsylvania, and the capital, Philadelphia, is described a being to-day the embodiment of Philistinism. William Penn made the land a more general refuge than New England. In the latter there was intolerance beyond wha was to be found in any cathedral city in Britain. All varieties of believers were welcomed in Philadelphia, and as a reaction we have modern Philistinism. Although, a we read in the "Evangeline" of Longfellow, "the street still re-echo the names of the trees of the forest, as if the fain would appease the Dryads whose haunts they molested, timbered houses were not generally used in the city durin the eighteenth century. Brick, stucco and stone obtaine more favour, owing probably to the number of German an other emigrants. It is remarkable also that "there we rarely any verandas, porches, or gardens. The fierce figh with the primeval forests had engendered a hatred shade-trees; the settlers preferred to let the sun bake their unprotected walls." In the interiors the mantels appear to be most characteristic.

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* *The Georgian Period*: A Collection of Papers dealing with Colonial or Eighteenth-Century Architecture in the United States. Together with References to Earlier Provincial and True Colonial Work. Boston: "American Architect and Building News" Company.

When Colonel Esmond went to Virginia it was with the intention of founding a new Castlewood, and he was only a type of the English gentlemen who would be out of place in New England, New York, or Pennsylvania. According to Mr. Cervin, "The Virginia gentry were the first to use glass for the lighting of rooms. Although timber was everywhere, brick was used for the houses." At first the brick came from England as a substitute for ballast. The following description is given of the general arrangement of the Virginian mansions :—

> There is marked individuality in the planning, on account of the many smaller structures required by the large estates with their hosts of dependents. In Maryland the offices, servants' quarters, tool-houses and the like were built as storey-and-a-half wings, connected with the main part by one-storey corridors. In Virginia, on the other hand, isolation was preferred, and these secondary structures, though low, were often two storeys in height. This practice, however, was not without exceptions. Generally the plans were symmetrical—a wing on one side balanced by one on the other, with the entrance in the middle. In Virginia this opened upon a hall running right through. Shirely Manor is an exception, and is said to have a French Mediæval prototype. In this building, 50 feet by 80 feet, the hall is in the north-western corner. Similar planning was quite common in Annapolis, in which place many other traces of French influences are found. In the Chase House at Annapolis the rooms are arranged also upon a transverse axis. The plan being symmetrical, it was only natural that a like disposition should be found in the façade. In the Harwood House, Annapolis, the axis of the front is well marked by the doorway of the first storey, by a splendid window above and by a rich bull's-eye in the attic. Ornamental wall pilasters or semi-detached columns never occur on these brick structures. The nearest approach to them is found under porches, where they are used as responds to the free-standing columns.

Many of the houses were erected without much regard to the conditions prescribed by economical laws. With large premises (halls are seen 28 feet wide) it was proper to have numerous guests, and the hospitality was usually on the most generous scale. Slave labour is not always profitable, and the returns from growing tobacco were often disappointing. As a result, parts of estates had to be sold, and houses are to be met with for which no tenants can be found who will keep up establishments becoming such ample provisions.

Wren is said to have designed a small courthouse, and the William and Mary College at Williamsburg, the capital of the colony. But the most remarkable of the architects was Thomas Jefferson, the statesman, whose influence on the American Revolution of 1776 was of primary importance. He succeeded after many efforts in obtaining from the Legislature of Virginia grants for the establishment of a university, and he drew the plans and superintended their realisation. The cost was 300,000 dollars. According to Mr. Cervin, "the group exhibits as do few, if any, contemporary colonial buildings an appreciation of monumental planning in its large, simple and well designed masses."

"The Georgian Period" has appeared in independent parts, with the plates printed on very thick paper. Six of hem are before us, and we have given a general notion of he districts which are treated. The seventh will comprise examples at Salem, Mass., Portsmouth, N.H., and ntervening places where shipmasters and East India merhants found dwelling-places. It was in Little Harbour, near Portsmouth, Governor Wentworth had his Great House looking out to sea, of which Longfellow's description expresses many of the characteristics of colonial architecture :—

> It was a pleasant mansion, an abode
> Near and yet hidden from the great high road,
> Sequestered among trees, a noble pile,
> Baronial and colonial in its style ;
> Gables and dormer windows everywhere,
> And stacks of chimneys rising high in air—
> Pandæan pipes, on which all winds that blew
> Made mournful music the whole winter through.
> Within, unwonted splendours met the eye—
> Panels, and floors of oak, and tapestry ;
> Carved chimneypieces, where on brazen dogs
> Revelled and roared the Christmas fires of logs ;
> Doors opening into darkness unawares,
> Mysterious passages and flights of stairs :
> And on the walls, in heavy gilded frames,
> The ancestral Wentworths with old scripture names.

In the eighth part Georgian work in England, and probably some Dutch work, will be exemplified in order to exhibit the sources from which colonial architects drew inspiration. It will complete the second volume. Four other parts are contemplated, which will deal with examples in North Carolina, South Carolina and Georgia, the interesting Moravian architecture of Delaware and Pennsylvania, the old French and Acadian architecture of Louisiana, with additional examples from Virginia, New England, the Middle States, &c. But the production will depend upon the assurances of support which will be received by the "American Architect and Building News" Company.

English precedents prevail in America, otherwise "The Georgian Period" would be brought out under the auspices of the Government of the United States, for every relic of antiquity, although it may not be more than a century old, should be considered precious in so new a country. There may be still thinkers like Emerson who consider English influence as unfavourable to the growth of American originality. But in the Georgian details England is only one of many factors; it would be necessary to go back to ancient Rome, or even to Athens, to discover the originals of the various forms, or it may be the supposed originals. But Americans can take care of themselves in such matters. For English architects the details will be found of great value. The characteristic which appears most prominent in them is refinement, and a finer set of suggestions for modern Classic could not easily be discovered. The plates make an impression which is impossible to be derived from foreign examples. We seem to have a revelation of work in some English county which had been closed against investigation or copying up to the present. There is no reason to prevent the plates from becoming as useful to English architects as they have been found in America. They are all produced in a style which does credit to the publishers, but so much photography, drawing, measuring and recording would not be forthcoming if commerce alone directed the operations. The architects who have co-operated were evidently eager to display to the world some of the artistic wealth which is to be found in their country, and they have demonstrated that whenever eighteenth-century work is considered the United States cannot be overlooked without loss.

ST. JAMES'S CHURCH, BERMONDSEY.

THIS church, which for two months has been undergoing repairs, was reopened on the 15th inst., when the Bishop of Rochester dedicated the new pulpit and choir stalls. The interior of the building has been completely transformed. The old-fashioned pews have been removed and their place taken by open oak seats. The walls have been coloured and ornamented with representations of flowers. The heating arrangements have been improved and electric light introduced. A handsome pulpit was the gift of the "Bermondsey Bees," and the oak choir stalls were contributed by Lord Llangattock. The total cost of the renovation was about 2,000*l*. The architect was Mr. A. H. Ryan Tenison. In the course of the service, which was choral, the Bishop of Rochester said it gave him unfeigned pleasure to be present, and he rejoiced with the people in the renovation. They had accomplished a great piece of work ; in his temerity he had thought it almost too great for them. They had inherited a church built at a very different time, and when the neighbourhood was but thinly populated, and now they had renovated it in a beautiful manner. The work had been well done—with dignity, simplicity and reverence—and it ought to make the services, so far as outward things could, far brighter than in the past.

During the renovation of the ancient church of Machen, near Newport, some plaster was removed from the west side of the church and disclosed two built-up doorways. On pulling down the masonry stairways leading to the rood-loft were discovered, and within the space two human skeletons were found. The church records do not throw any light on the matter, except that for over two hundred years nothing seems to have been known of the existence of the stairways.

NOTES AND COMMENTS.

Probably no collection in the Paris Exhibition will be more regretted by archæologists when the great show comes to an end than the treasures which have been lent by the bishops, clergy and guardians of French churches. At the same time, there will be satisfaction when it is found that the numerous objects are safely deposited in the sacristies to which they belong. The greater part must have appeared novel to English students, for although in visiting churches it is possible to see those relics, time does not always allow of their production. For example, Aix has contributed a triptych in which Nicolas Froment gives a curious version of the Burning Bush, for in the centre panel the Virgin and Child are introduced amidst a mass of roses. On the wings are portraits of King René, dear to poetasters and artists, and his second wife, Jeanne de Laval, with their patron saints. It was at one time supposed the triptych was painted by the king. Fine tapestries are sent from Rheims, Sens, Angers, Beauvais, &c. From Chartres come a reliquary of the thirteenth century, a beautiful portable altar of the fifteenth century, and an incense boat which was presented by Henry III. No town in France is, however, so well represented as Conques, which is about twenty five miles from Rodez. The Romanesque church of St. Foy, which is supposed to date from the beginning of the eleventh century, has a *trésor* of which the contents are of inestimable value. One of the most curious is Charlemagne's "A." It is a tradition that the emperor presented the letters of the alphabet in silver adorned with precious stones to twenty-four churches, one letter to each. They have all disappeared with the exception of the "A" which is preserved in Conques. Charlemagne's object in sending the letters is unknown, and has given rise to several theories. There is a statue of St. Foy in silver gilt, 18 inches high, and studded with gems Many other remarkable examples of goldsmith's work appear from Conques, of which the people have reason to be proud. At the time of the Revolution the relics were distributed singly among the townsfolk, by whom they were preserved until the days of vandalism were over.

The "Gordian Knot" is generally supposed to have been an ancient rope trick, which, except to mountebanks, was not of any more importance than modern attempts in tying. It was, however, supposed to bring very valuable prizes. According to the legends, whoever was able to untie the Phrygian knot was to have the whole empire of Asia as his reward. Alexander the Great surmounted the difficulty with the aid of his sword. The old story has acquired new interest, for explorations are in progress at Beylikkopru, in the district of Eski Schehir-Angora, Asia Minor, which is claimed to be the ancient Gordium where the chariot-pole was attached to the horses in a manner which made unyoking impossible. Two German professors, the brothers Körte, have opened several tumuli, and in them have discovered bronze articles of simple form but of excellent manufacture. Examples of terra-cotta of an architectural character, and displaying Greek influence, were also met with, as well as vessels of clay, figures in alabaster, besides Phrygian inscriptions. Alexander the Great is believed to have invaded Phrygia in b.c. 333; but the remains discovered are supposed to belong to an earlier time, and are suggestive of an advanced civilisation.

The Local Government Board have given their sanction to the proposal of the Plymouth Borough Council to borrow 10,215*l.* for the erection of workmen's dwellings. The site selected is at Prince Rock, and the houses will form a part of the How Street and Looe Street improvement scheme. The committee of the Council have lost no time before making the necessary arrangements. They have given instructions to Messrs. Hine & Odgers to prepare plans and specifications and to obtain tenders for carrying out the works. Some other building projects are in contemplation.

The value of the small book called "Defects in Plumbing and Drainage Work," by Mr. Vacher, medical officer of health for Cheshire (John Heywood), is not to be measured by its low price of a shilling. It originated in an application by the author to officers of his own class and sanitary inspectors asking for particulars of defects which they had encountered. Over a hundred examples were collected, and they may be said to comprise the majority of evils which arise in connection with house drainage. Plain diagrams are given, and the character of the defects are therefore made evident to the eye. They do not always arise from careless workmanship. One example must be ascribed to an architect who objected to the appearance of rain-water pipes on the front elevation of his building, and we are told how "the rain from a cornice gutter in the front was carried right through the house to a soil-pipe in the rear, and as the horizontal pipe was not watertight, a nuisance from leaking and foul air was created, and the inside of the house was in direct communication with the sewer drain." It was inevitable that fever should appear in that house. In another case, where a ventilating pipe had to be carried along a wall near a window, no less than ten joints were introduced. All the castings formed reversed curves; evidently the intention was that ornamentation should be secured in that way, regardless of the resistance offered to air currents by friction. In fifteen suburban residences similar defects were noticed. The soil-pipe was carried up through the bottom of the rain-water system and made to act the part of overflow. As the soil-pipe directly communicated with the main sewer and there was no ventilation to the closet, the sanitary arrangements were most defective. One regrettable case occurred at a hospital where there were two distinct drainage systems, but it was left to chance to decide into which system the waste-pipes were to deliver. A record of defects is useful in all branches of building, and Mr. Vacher's book will often suggest what should be avoided.

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: SOUTH CHOIR AISLE LOOKING WEST, SHOWING THE MINSTRELS' GALLERY.

One of the features in the illustration of the South Choir Aisle is the so-called minstrels' gallery. It should be remarked that the name does not necessarily indicate the use which was made of the structure. The clergy and monks were the musical performers in Mediæval celebrations, and their place was in the choir. There was no need to supplement their services by musicians in another part of the building. Various other uses for the gallery can be suggested, but there is no evidence on the subject. From the want of correspondence with the neighbouring arcading, the gallery must have been an innovation, but no record is to be found proving who was the donor. The existence of such a structure adds to the interest of the choir aisle, although it increases the darkness which surrounds the history of the building.

BUSINESS PREMISES, ST. WERBURGH STREET, CHESTER.

ST. JOHN'S CHURCH, WESTON, CHESHIRE. SOUTH-WEST VIEW. NORTH-WEST VIEW.

THE TEMPLE OR BASILICA OF SEGESTA.

There is much uncertainty about the building at Segesta which we illustrate this week. It has been described as a basilica and as a temple. The Doric order appears to have been the style most frequently used in Sicily, and the temple was one of several examples. The columns, however, have not the fluting which was one of the most important characteristics of the order. It might be assumed there was reason for the omission, but it has been supposed the temple was left in an unfinished state owing to the Athenian or Carthaginian invasion. The problem, therefore, is, Was fluting usually executed in the quarries on each drum of the shaft, or was the column treated like a sculptured figure and the channelling formed from top to bottom in position? The deity to whom the building was dedicated is also unknown. It is remarkable that the temple should have been respected while the city of Segesta was destroyed, as well as the three temples of Selinus in the same country, thus giving rise to the verse of King Louis of Bavaria:—

> Selinunt und Segest, die ihr euch Feinde gewesen,
> Längstens bestehet auch ihr in der Geschichte allein.

BOARD ROOM OFFICES, WALSALL UNION.

NEW BUSINESS PREMISES, HOLBORN.

NOTE ON THE RENAISSANCE CHURCHES OF NORTH-WESTERN FINISTERRE.

By Arthur Maude.

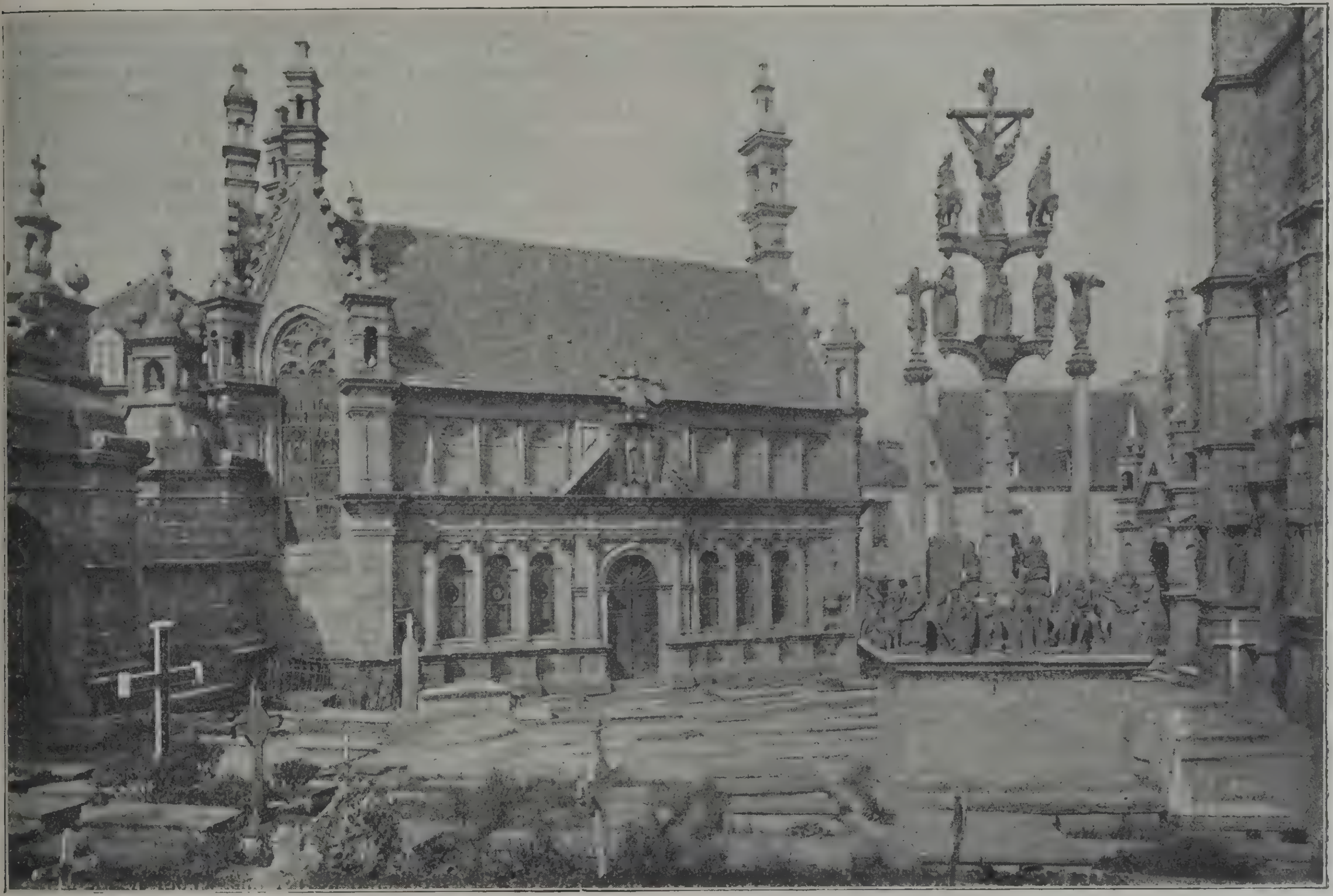
THE Renaissance churches of North-Western Finisterre are of the highest interest, and some of the best specimens lie in such isolated, unfrequented villages that they are possibly little known. I have lately inspected a series of them when bicycling from Landernau (near Brest) to St. Malo. The examples I noted were the ruined chapel (or small parish church) of La Roche and the large churches of Landivisiau, Lampaul, Guimiliau and St. Thégonnec. These all present, more or less, certain points in common; their approximate date of almost complete reconstruction is the last quarter of the sixteenth century. In all the form of the original Gothic structure is carefully preserved, as is also the general proportion of the Gothic towers and the form of spire. There is no attempt made to introduce Palladian orders into the spire, as was done by Wren and his imitators, and the results are incomparably more peaceful and harmonious than the best of the Palladian London churches. The forms of spire in these Breton churches are of two types; the beautiful hexagonal crocketted stone spire with numerous pierced, floriated openings, which exhibits its culmination in the spires of Quimper; or the cupola of northern German shapes (roofed with small schistous slates, resembling shingles) of which there are such good examples in Dinan. In all the towers, however, to the spring of the spires the decoration is purely Renaissance. An interesting feature is the invariable stone cannon used as a gargoyle.

The forms of arches used in the churches are either the earlier Gothic forms, found and retained, of middle fifteenth-century work, or these have been replaced by simple round arches of good span which complete beautifully the Romanesque character of the whole. When, however, it has been necessary to reconstruct vaulting the work is very feeble.

The interior at Lampaul is of singular interest. The whole east end above the high altar and of two large flanking chapels is entirely covered from floor to roof with magnificent carved woodwork richly gilt and coloured. The work is clearly of the early and middle seventeenth century, and is most striking in its variety of statues of saints and conventional moulding. When, if ever, it has been restored I cannot learn, but it is as fresh and bright as possible.

There is also a grandly-carved baldachino in uncoloured chestnut wood over the font, of later date than the reredos, and other carved woodwork in the church of great beauty. Inferior imitations of the painted woodwork of Lampaul are found both at St. Guimiliau and St. Thégonnec—inferior but sufficiently interesting.

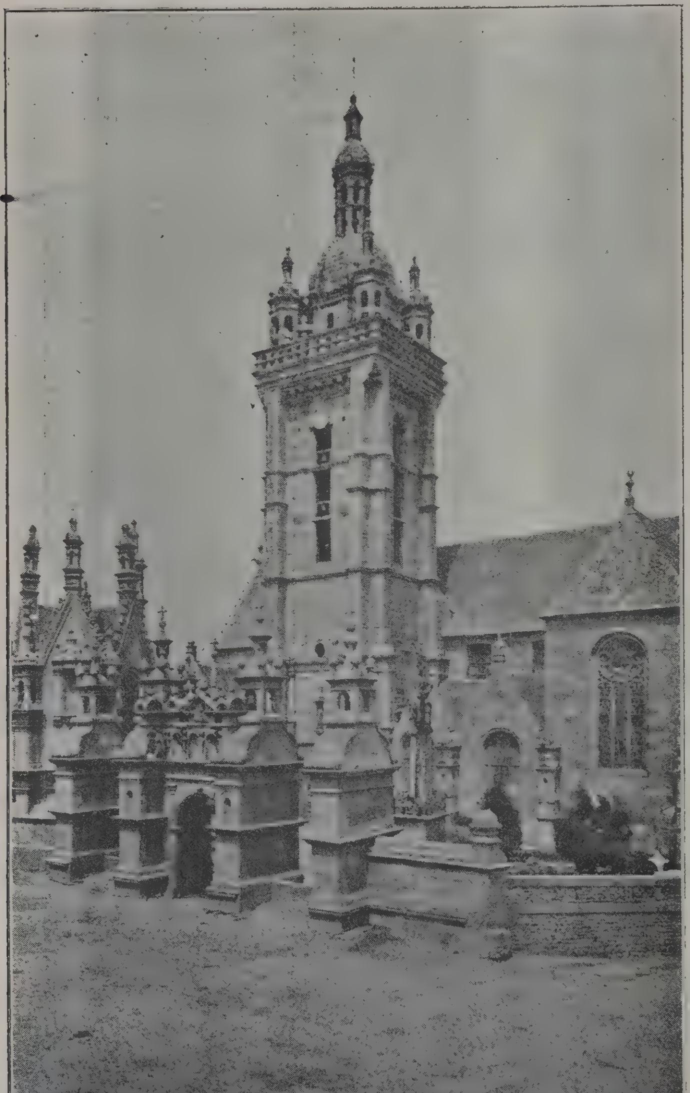
The three great churches of Lampaul, Quimiliau and St. Thégonnec present the common features of fine archways to the churchyard; of detached chapels adjoining the churches and of huge and elaborate "calvaries" in the churchyards. The chapels are extremely beautifully proportioned little Renaissance buildings, reminding us of the best traditions of such works in Cambridge, Oxford or London. Internally they are quite vile. At St. Thégonnec, however, there is a crypt under the chapel which contains, behind a grille, a lovely pietà of life-sized, detached wooden figures in colour. There is a similar pietà, better in workmanship and design, poked away in a dismantled chapel under one of the towers in Quimper Cathedral. Both groups of figures must, I should judge, be the work of Italian workmen; they probably date from the first years of the eighteenth century. The calvaries, both at Quimiliau and Lampaul, are well known to artists and photographers. That of the former village is of earlier date (1581) than the cross of Lampaul. The Guimiliau calvary is a large structure like a market cross, supported on arches, with a narrow stairway leading up to a platform crowded with groups of sculptured stone figures illustrating scenes in Our Lord's life, surrounding a huge rococo group of crosses with figures of the Saviour and the two thieves.



St. Thégonnec: The Calvary and Ossuary.

A fine detail at St. Thégonnec is a grand skew archway cut through the south-western entrance of the tower, which presents a fine roof, necessarily of great strength. The stately and well-proportioned "arcs de triomphe" or entrance gates to all these churchyards are very striking; the Italian models are here better followed than in the case of many more pretentious English gateways.

In Western Finisterre the Renaissance architect has been singularly happy, and his work is well preserved, but he seems to have failed as he went eastward. In the beautiful and quaint town of Guincamp is a fine church where strange things have been done. The material used for construction is clearly bad. The nave presents on its north side an extremely bold and strong triforium of "ogivale" Gothic, but on the south side this is repeated in the form of an extraordinary arrangement of square mullioned openings of Renaissance design, loaded with crude decoration resembling the ornamentation of bedposts of the seventeenth century. The general effect of these openings is very impressive, however, though it has no grace.



St. Thégonnec Triumphal: Arch and Church.

Probably the architectural failures of Guincamp are partly due to bad material: the difficulties of thrust in the choir have been so great that they have been compelled to throw out heavy flying buttresses across the side aisles below the level of their roofs. While the form of the fourteenth-century vaulting of the nave has been retained, it has been found necessary to narrow the arching of the central tower so considerably that the choir is hardly visible from the nave at all. The great bell tower is quite the finest piece of Renaissance work in Brittany.

The villages mentioned here are never far removed from a railway. The inn at Landivisiau is charming. It is not only most comfortable, with excellent cooking, but it is a museum of old Breton furniture and bric-à-brac from which the shops of Quimper and other places are largely furnished. To bicyclists the warning is due that the main road from Brest to Paris through St. Thégonnec eastward to Morlaix was diverted northwards some years ago, and the old road is now very bad.

Most certainly those seeking the striking and beautiful in architecture in this part of the world should look up these remarkable churches. The proportions are so good, the decoration so lavish, the masonry so careful, and the material so excellent, that I doubt if outside Italy such fine parish churches of this date are often to be found.

THE EARLY DAYS OF SIR T. LAWRENCE, P.R.A.

PRECOCITY of talent is, perhaps, never more rarely exhibited than in painting. It is true that many schoolboys have been supposed to have evinced an intuitive genius for painting, from their propensity for scribbling on the blank leaves or margins of their lexicons, as did the illustrious Sir Joshua Reynolds; his father, however, who was a man of sense, wrote upon one of these attempts at pictorial imitation which his son made in his tenth year, "This was done by Josh in pure idleness." In the whole history of painting there could hardly be found a more remarkable example than was shown by the early days of Sir Thomas Lawrence. He was a native of Bristol, where he was born in April, 1769, at the White Hart Inn, or White Lion Inn, then kept by his father, in Broad Street. When he was about a year old his father removed to Devizes, and exchanged his sign of the White Hart for that of the Black Bear. He was, however, unsuccessful in his speculation and failed. Mr. Lawrence, senior, had started in life as an exciseman, and married the daughter of a clergyman, the then incumbent of Tenbury, in Gloucestershire. He subsequently took the inn already mentioned, but on his failure retired to Bath, where he established himself in a house in Alfred Street, and for some time owed his own support and that of his family to the talents and industry of his son Thomas, then in his boyhood.

Without favouring circumstances, therefore, it may well be ascribed to innate genius that when four young Lawrence could take crayon likenesses, and it is a very remarkable fact that at the age of five his drawings of eyes forcibly attracted the attention of Mr. Prince Hoare at Bath. Fuseli, who was fond of depreciating the merits of Sir Thomas, would conclude a detracting sentence by uttering with his energy and strong emphasis, "But he paints eyes better than Titian." At seven the fame of Lawrence induced Sherwin to publish an engraving of his portrait.

It may be remarked that the Black Bear at Devizes was frequented by Garrick, Foote, Wilkes, Churchill, Barry, Henderson, Burke, Sheridan and other great wits and orators, and no doubt the boy must have attracted their attention and benefited by their remarks. On one occasion we find Sir William Chambers, the architect, praising the child's talents, and Colonel Von Homrich giving him a guinea for his beautiful handwriting. Mr. and Mrs. Garrick, when they were at Devizes, used to take the child into a summer-house and amuse themselves by his clever remarks and declamation. When they arrived at the Black Bear their first inquiry was for Master Thomas, and whether he had learnt any more speeches. Mr. Hugh Boyd, one of the supposed authors of Junius, was so enraptured with the beauty and cleverness of the child that he invited the father, for the sake of the son, to his house in town. They stayed with him several weeks, during which he took the child to the houses of eminent persons, whom he delighted with his extraordinary talents, particularly with his pencil. His copying some stuccoes at the house of Mr. Richard Lee is spoken of as a very surprising proof of juvenile talent.

The first painting that Lawrence ever saw, except the daubs upon the country inns or the portraits over the farmers' chimney-pieces, was in 1777, when he was eight years old, and was taken through Corsham House, the seat of the Methuen family. Going over the rooms, the visitants totally forgot the child, and, retracing their steps, they found him in one of the rooms rivetted to the spot by a painting of Rubens. "Ah, I shall never be able to paint like that," was his exclamation upon their removing him from the picture At the age of ten, suddenly and at his own suggestion, the young artist burst from taking likenesses into original compositions of the highest class. He painted as a subject "Christ reproving Peter for denying Him before Pilate," and Reuben's application to his father that Benjamin might accompany his brethren into Egypt. Encouraged in these attempts, he next chose for a subject "Haman and Mordecai," which he finished with great rapidity. The fame of the juvenile artist now spread among the higher families of Wiltshire and the neighbouring counties, and we find Mr. Weld, of Lulworth Castle, brought him to the Earl of Pembroke's at Wilton and to the mansions of other noblemen and gentlemen who possessed galleries of eminent masters.

In the "Miscellanies" of the Hon. Dames Barrington, published in 1781, there is a testimony to young Lawrence's extraordinary powers He wrote :—"As I have mentioned so many other proofs of early genius in children, I cannot here pass unnoticed Master Lawrence, son of an innkeeper at Devizes, in Wiltshire. This boy is now (viz. February 1780) nearly ten years and a half old ; but at the age of nine, without the most distant instruction from anyone, he was capable of copying historical pictures in a masterly style ; and also succeeded amazingly in compositions of his own, particularly that of 'Peter denying Christ.' In about seven minutes he scarcely ever failed of drawing a strong likeness of any person present, which had generally much freedom and grace, if the subject permitted He is likewise an excellent reader of blank verse, and will immediately convince anyone that he both understands and feels the striking passages of Milton or Shakespeare."

The business of the Black Bear was not prospering, and in 1779 Mr. Lawrence and his family were obliged to leave Devizes. In the first instance they proceeded to Oxford, Mr. Lawrence's design being to turn his son's talents to some profitable account The boy was only ten years of age, and yet to him was the family obliged to look for assistance. The Bishop of Oxford and many of the dignitaries of the University in their way to Bath had witnessed the extraordinary talents of the innkeeper's child at Devizes, and upon their return to Oxford his genius had been the subject of much discussion. When, therefore, it was known that Mr Lawrence and his family had arrived in the city the father was much noticed, and the child as much caressed. The boy's pencil was in immediate requisition

In 1782 his father repaired to Bath, and fixed his residence in Alfred Street. Bath at that time was as the west end of London, devoid of its mixed society and vulgarity, and it was the temporary sojourn of all that was titled, affluent or distinguished. By these was young Lawrence patronised, and it became a fashion to sit for his oval crayon portraits, the price of which was soon raised from half a guinea to one guinea and even to a guinea and a half. About the same time he entered into competition with a crayon drawing after Raphael's "Transfiguration" for a prize offered by the Society of Arts. He won, an event of which he afterwards spoke at an anniversary of the Society in terms of the warmest gratitude, ascribing to this encouragement and honour much of that enthusiastic feeling and love of his art which had raised him to his eminent station. The documents respecting this transaction are very interesting. The first entry appears in the MS. proceedings of the Society under the date of March 9, 1784, and is as follows :—"Resolved,—That as the drawing marked *G.* appears, by a date upon it, to have been executed in the year 1782, it cannot, according to the conditions, p. 197, be admitted a candidate." In consequence of this difficulty it appears that inquiries had been instituted, and on March 30 we find the annexed record :—

"Took into consideration the drawings of the "Transfiguration" marked *G.*, and opened the paper containing the name of the candidate, according to the directions of the Society, and it appeared to the committee that the candidate was T. Lawrence, aged thirteen, 1783, in Alfred Street, Bath. The committee having received satisfactory information that the production is entirely the work of the young man, resolved to recommend to the Society to give the greater silver palette gilt and five guineas to Mr T. Lawrence, as a token of the Society's approbation of his abilities"

From Bath the family appear to have removed to Salisbury, where Lawrence practised with success as a portraitist in crayons. Then came a time when he was desirous to employ his talent as an actor.

In John Bernard's "Retrospections of the Stage" under the events of the year 1786-87, or just prior to Lawrence's settling in London, there is the following account of the young artist's dramatic powers :—"One of the minor characters of this performance was supported by young Lawrence, the painter, then about seventeen, who was receiving professional instructions, I believe, from a Mr Hoare, of Bath. On my first visit to Bath, I became acquainted with his father, who had formerly been an actor, and was then an innkeeper at Devizes. The stage, though a relinquished, was his favourite pursuit, and he came to Bath regularly once a week to pass an evening in the green-room. Here he recounted his early adventures, in connection with some member of the company, and criticised actors metropolitan and provincial. I could not learn the measure of his own talents, but he certainly deserved the fame he enjoyed of being a most excellent reader. He had a clear, full voice, and gave to Milton and to Shakespeare all their dignity and tenderness. Ability of any kind is seldom unaccompanied with vanity ; it is the shadow which is sure to be produced by the sunshine of public favour. Lawrence not only used to entertain his friends at home (round a snug parlour fire) with his 'readings,' but whenever a new play was announced would come over to Bath and proffer his services to the actors, to 'read their parts,' a kindness which some who intended to sponge at his house would accept, but others of more dignity declined. But Lawrence at this time owed all his notoriety to his son Tom, a boy of about nine years of age, who exhibited a wonderful precocity of talent in taking likenesses. His father, however, had taught him to read Shakespeare and Milton with considerable effect, and considered his ability in this respect (since it proceeded from himself) of a much higher order than the former, which was natural. Nevertheless, the distinction between the two was, that as a reader 'little Tom' was but little Tom—a very clever child, nine years of age, and as a sketcher of likenesses he disclosed the rudiments of the future powers of the President. There was something about little Lawrence, however, which excited the surprise of the most casual observer. He was a perfect man in miniature; his confidence and self-possession smacked of one-and-twenty. Lawrence frequently brought his boy to the green-room, and we would set him on a table and make him recite 'Hamlet's directions to the Players.' On one of these occasions Henderson was present, and expressed much gratification. The little fellow, in return for our civilities and flatteries, was desirous to take our likenesses the first time we came to Devizes, and Edwin and myself afforded him an opportunity soon after, on one of our non-play-day excursions. After dinner, Lawrence proposed giving us a 'reading' as usual ; but Tom reminding him of our promise, we preferred a specimen of his talents as being the most novel. The young artist collected his materials very quickly, and essayed my visage the first. In about ten minutes he produced a faithful delineation in crayon, which for many years I kept as a curiosity. He next attempted Edwin's, who, startled at the boy's ability, resolved (in his usual way) to perplex him. No man had a more flexible countenance than Edwin ; it was not only well-featured but well-muscled, if I may be allowed the expression, which enabled him to throw over its surface, as on a moral prism, all the colours of expression, minutely blending or powerfully contrasting. He accordingly commenced his sitting by settling his face into a sober and rather serious aspect, and when the young artist had taken its outline and come to the eyes he began gradually but imperceptibly to extend and change it, raising his brows, compressing his lips and widening his mouth, till his face wore the expression of brightness and gaiety. Tom no sooner perceived the change than he started in supreme wonder, attributing it to a defect in his own vision. The first outline was accordingly abandoned and a second commenced. Tom was now more particular, and watched him narrowly ; but Edwin, feature by feature and muscle by muscle, so completely ran what might have been called the gamut of his countenance (as the various components of its harmony), that the boy drew and rubbed out till his hand fell by his side, and he stood silently looking in Edwin's face to discover, if possible, its true expression. Edwin could not long maintain his composure at this scrutiny, and revealed the hoax with a burst of merriment that mimicked thunder.

"As young Lawrence grew up his Shakespearean readings and his frequent visits to the theatre imbued him with a strong dramatic propensity, and about his sixteenth year he had serious intentions of making the stage his profession. I was now in Bath once more, but with a wonderful improvement in my fame and fortunes. No man could be more favourably situated than myself (combining private with public advantages) to give advice or assistance to an aspirant, and the young artist needed no introduction in coming to me for both. I heard him recite Jaffier, and though private recitation, I will admit, is at all times an imperfect criterion, I did not perceive on this occasion any evidences of talent he could balance against that which was acknowledged in his present pursuit. I desired him, however, to call on me again, and said that in the interim I would speak to Mr. Palmer. In the interim I met his father, and felt myself bound to disclose what had passed. Lawrence had failed in his business at Devizes, and was looking forward to his son's efforts for support. Knowing from experience the precarious fortunes of an actor, and by this time the value of his son's talents, he was necessarily alarmed at my intelligence, and begged I would use all my influence in dissuading him from his design. It is certainly one of my pleasantest recollections that by thus lending my aid to check this early propensity (which if encouraged must have led to a renouncement of the pencil) I was an agent, however humble or indirect, in the furtherance of my worthy friend's ultimate prosperity."

To avoid a renewal of the temptation there was another removal to London. Lawrence was in his eighteenth year. His father immediately hired apartments at four guineas a week over a pastrycook's shop in Leicester Square. This at once indicates his love of display and his possession of funds. These lodgings were within sight of the house of Sir Joshua Reynolds, whose study and drawing-rooms were daily visited by the nobility and the wealthy and celebrated persons in London. This was a sight inspiring to a lad of real genius and laudable ambition. Provincial and metropolitan fame are very distinct, and notwithstanding young Lawrence's having been th phenomenon of Bath, his having received the medal of th

Society of Arts, and his juvenile drawings having been talked of in London and Paris, these were scarcely sufficient introduction to a step so bold as that of challenging the notice of Sir Joshua Reynolds, in the height of his fame and splendour. But Sir Joshua was kind and easy of access to persons of decided talents, and Mr. Prince Hoare had paved the way for the President's noticing the young artist. Lawrence's first appearance as an exhibitor at Somerset House was in 1787 (when 666 pictures &c. formed the collection), and the catalogue was comprised in twenty-six pages. Here we find T. Lawrence, at No. 4 Leicester Square, with seven productions, namely, No. 184, Mad Girl; 207, Portrait of a Lady; 229, Portrait of a young Lady; 231, Portrait of a Lady; 234, Mrs. Esten, in the character of Belvidera; 255, Vestal Virgin; and 258, Portrait of a young Lady. Next year the artist resided in Jermyn Street, and sent six of his performances, all portraits. In 1789, still 41 Jermyn Street, he exhibited no fewer than thirteen pieces, and was evidently advancing rapidly in his profession, as three of the portraits are of "Ladies of Quality," besides His Royal Highness the Duke of York, and a head from nature. In 1790, among twelve pictures we notice the Princess Amelia, Her Majesty, a Nobleman's Son, a General Officer and a celebrated Actress. In 1791 his abode was 24 Old Bond Street, and Homer reciting his Poems is the first subject we meet with in his name.

In 1792, the prosperous record runs, "Thomas Lawrence, a principal painter in ordinary to His Majesty;" and his chief pictures are a Lady of Fashion as La Penserosa, and a portrait of His Majesty.

When the whole-length portrait of Miss Farren appeared, Lawrence was only in his twenty-first year; it was exhibited at Somerset House as a pendant to Sir Joshua's whole length of Mrs. Billington as St. Cecilia. The noble candour of this great man was then manifested by the unqualified applause which he bestowed on this work of the young painter; and he then predicted the honours which Mr. Lawrence would obtain for himself, his country and his art.

PLACE NAMES OF ENGLISH COUNTIES.*

I DO not think any apology is needed for introducing to you the subject of this paper. The late Archbishop Trench, in one of those charming books of his ("On the Study of Words") says:—"I am persuaded that I have used no exaggeration in saying that for many a young man his first discovery that words are living powers has been like the dropping of scales from his eyes, like the acquiring of another sense, or the introduction into a new world." And he proceeds to show, step by step, the worlds of meaning that environ the simplest word, for language is fossil poetry, and words are the guardians of thoughts. I trust to be able to show you how deep is the interest attaching to our English place-names. It is the loss of the antiquary that he is less able than the student of the natural sciences to systematise his knowledge. "The region of nature is the region of God's wonders, the region of art is the region of man's wonders," and the former, based as it is upon the most consummate plan of order, must necessarily represent the perfection of system. Man, in his study of nature, does not create the system, but finds out step by step what that system is as already existent. But the region of man's wonders of necessity derives inspiration from nature, the mother of us all, and so we may learn the lesson she teaches that all knowledge is of value in proportion as we systematise it; and that, indeed, without system our knowledge becomes a mere *olla podrida* of isolated facts, true enough in themselves, but bereft of their real value in the absence of a due appreciation of their relationship to one another. I propose then, in this paper, to take the place-names of our country in some sort of natural order, with the hope that it may be found useful by the members, beginning with the name England itself, then taking the counties and some of the principal towns. The further development of the plan would permit the consideration of London and its street-names, and the counties of Kent, Surrey, Sussex, Hampshire, Middlesex, Essex and Herts, to which our rambles are for the most part confined, in respect of the origin and meaning of the names of their towns and villages, and in such a sketch their rivers and hills would take a place.

Before the coming of the various tribes from the N.W. of Europe, who settled in this country from the fourth century onward, it was known as Britain. When the overmastering power of the Anglo-Saxon races drove the Britons into the western parts of the island, it was not perhaps necessary to give it a new name, but all the same a new name it acquired in course of time, exactly when it would perhaps be difficult to say. There were Jutes from Jutland, Angles, Saxons, Norsemen, Belgic Gauls and Danes, and England might have been called New Saxony, as in later times America was called New England. But the fact remains that the least powerful tribe—the Angles of East Anglia, the Northfolk and the Southfolk—has given its name to the island. The first attack of the Teutonic tribes was in 364, but it was not until 449 or 450 that the first of them came to stay. They were Jutes, and in Jutland we may see their name; they landed at Ebbsfleet (Eopwine's Fleot), with their ealdormen, Hengest and Horsa, and having come originally to assist the Britons against their enemies the Picts, took the field in their turn against their former employers. In the country of the Caint, during the fighting that ensued, Horsa was killed, and "the flint heap of Horsted, which has long preserved his name, and was held in aftertime to mark his grave, is thus the earliest of those monuments of English valour of which Westminster is the last and noblest shrine" (J. R Green, "Making of England"). We are not concerned now with the names of the various districts under the Britons, but we might remember that those districts were not shires or portions cut off from one another by a more or less clearly defined method of division, but were simply the parts of the country inhabited by the various tribes of Brythons and Goidels who bore such names as these—Iceni, Trinovantes, Catuvellauni, Atrebates and Cantii. Now the last name is a convenient example of the retention by the conquering Saxon of the British name of the subdued country.

Kent then is the home of the Cant-wara (men of the headland), whom the Romans called the Cantii, and the origin of the name is to be found no doubt in the headlands of Dover and Beachy. Cenn is the British for a head or mountain. Now the chief town of the country of the Cantii has shared in the good fortune of the county by retaining its British name when others lost it under the Saxon Conquest In Cant-er-bury we have Cant-wara-byrig (the burgh of the men of the headland). Kent was the first of the Anglo-Saxon kingdoms to be founded (A.D. 457), and this was probably the reason that the name of its former inhabitants was adopted by the Saxons who settled there. When the Angles founded a kingdom in the country of Iceni and the Trinovantes over a century later (A.D 571), they called it the country of the Angles, and divided it into the districts of the Northfolk (Norfolk) and Southfolk (Suffolk). Kent stands almost alone in not having a suffix to declare its relationship to other counties—Surrey, Durham and Cornwall are the other exceptions to the general rule. It is not singular, however, in retaining the name of the early inhabitants of the county, as we shall see hereafter.

Surrey is called Sothe-reye in Robert of Gloucester; it is the South realm, or South kingdom, and the name was probably given from its position south of the Thames and London

Cornwall also stands by itself as a county name. We know that the conquering Saxon drove the British into the western parts of the island—into Wales and Cornwall, which were called North Wales and Corn Wales respectively by early historians. "Corn" is the Latin cornu, a horn; the people of Cornwall were the Welsh of the horn-shaped portion of the island. There is a village called Wales in the Derbyshire hills, where the British escaped being driven to the West by the Saxons, and Calais was early known as Galeys or Waleys (Wales).

Durham might at first sight be supposed to derive its name from the Anglo-Saxon ham, home, and the Norse dur, water, but in reality it is from the Celtic dun, a hill fort, and holm. In the Anglo-Saxon Chronicle it is written Dunholm, and the signature of the Bishop of Durham has always been Dunelm.

We will take next the three counties having the suffix sex. Middlesex, Essex and Sussex derive their names from the Middle Saxons, the East Saxons and the South Saxons respectively. There was a kingdom of Wessex, the country of the West Saxons, which included the present counties of Surrey, Hampshire and the Isle of Wight, Berkshire, Wiltshire, Dorset, Somerset, Devon and part of Cornwall

The counties of Norfolk and Suffolk were those districts inhabited by the Northfolk and the Southfolk, subdivisions of the East Angles. A very large majority of the English counties retain the terminal shire, and again a large number take their names from their county towns, just as Rome gave its name to the great Roman Empire, and the obscure village Schwytz to the country of Switzerland. In Somerset, Dorset and Wilts we have interesting examples of another class of county names in which the Anglo-Saxon word sætan (settlers) occurs, sæte being the place settled in. Thus Somerset is the country of the Sumersætan, Dorset of the Dorsætan, and Wiltshire of the Wilsætan. So Devonshire is the country of the Damnonii, and Worcestershire of the Huicii. In the latter case we have the very frequent word ceaster, which tells us at once that the county takes its name from the town. Worcester is Huicwara-ceaster, the castle of the inhabitants of the country of the Huiccii or Huiccas, a branch of the Anglian family of which we know but little. Other interesting examples of the application of the names of tribes to places may be seen in Cassiobury (Cassii), Iken, Ickboro' and Ickworth (Iceni), Scotland (Scoti), and the Isle of Wight (Jutes) [Geat, Gwit, Wiht, Wight].

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* A paper read by Mr. Theo. Pitt, F.C.S., at a meeting of the members of the Upper Norwood Athenæum.

One writer tells us that Gloucestershire was the shire of the camp-town in which Gloi, a son of the Emperor Claudius, was born during the Roman occupation of Britain. I am inclined to think this is somewhat inaccurate, and that we shall find the root of Gloucester in the Celtic Caer-Glowe, the fair city. It is true that the city was at one period named Claudiocestria, in honour of the Emperor Claudius, who certainly, as Suetonius tells us, spent some considerable time in the neighbourhood, and it might be assumed on phonetic grounds that Gloucester is a corruption of Claudiocestria ; but it might with much greater reason be assumed that Caer-Glowe was the real root from which the city, and hence the county, derived the name.

In Worcester and Gloucester we have two examples of the occurrence of a modification of the Latin word castra, a camp or fortified place. There are three of these modifications, chester, caster and cester, and, we may add, the Celtic caer, so often occurring in Wales, and examples of place-names containing these words will readily occur to you. As Isaac Taylor points out, chester is universal in Essex, Sussex, Wessex and other purely Saxon districts, caster in the Anglian kingdoms, and cester in those which, though mainly Anglian, were subject to a certain amount of Saxon influence.

Cheshire (Chester-shire) is also one of those counties which takes its name from that of its chief city ; in this case, one of the very few purely Roman names left in the country.

Leicestershire seems to be derived from Legionis castra, one of the Roman legions having been settled there; but Wagner says this is the shire of the camp-town on the river Leire, now called the Soar.

Lancashire is the shire of the city of Lancaster, the prefix being derived from the river Lune, which flows through it, so that in the word Lancaster we have caster, or the camp-town on the Lune.

We will take next the county names containing the suffix ford—Oxford, Hertford, Bedford, Hereford and Stafford—and in each case the county derives its name from the principal town and adds the suffix shire. The Saxon word ford occurs in very many instances of important towns where rivers had to be forded, and the interesting example of Stratford-le-Bow shows that "the dangerous narrow Saxon ford over the Lea was not replaced by a 'bow,' or 'arched bridge,' till after the time of the Norman Conquest." (I. Taylor.)

At Oxford we may find an animal, the ox, as at Hertford we find the hart, and at Derby the deer. Mr. Boase tells us that the name of Oxford tells the story of its birth—that a point in the river offered a ford where cattle-drovers could cross the stream, and he defines a ford in this connection as a place where the water was not only shallow, but where there was a firm road through the stream. The arms of the city of Oxford are "argent, an ox gules armed and unguled or, in base barry wavy of six azure and argent."

There is an alternative meaning to Hertford. Isaac Taylor finds in the prefix the Celtic rhyd, which is synonymous with the Saxon ford. If this really be the source of the name it would read ford-ford, but this is by no means an unusual result in place-names, for the same author gives us an amusing example in Wansbeckwater, which means river-water—river-water, and, like others of its class, is arrived at by an imperfect comprehension of the meaning of the name given to one race of people by the race which succeeded them.

Bedford is called Bedan-ford in the Anglo-Saxon Chronicle, and may possibly contain the name of the head of the tribe, as Bedca.

Hereford appears to contain the Welsh root garw, the equivalent of the Irish and Gaelic garbh = rough ; there is a river Garnar in Herefordshire.

We will now take the four counties whose names end in land, though in other respects they have little in common. Northumberland is the land north of the river Humber, and has possessed the name from an early date, for an Anglo-Saxon author calls it Northymbra-Lande. Cumberland, like Cambria, is the land of the Cymry, or named from the combes ; Westmoreland is that of the people of the western moors ; and Rutland, like Rugby and Ratby, gets its name from its red soil, as do Redcliff, near Bristol, and Ratcliff in London. Two only of the remaining counties contain a common root, the ham of the Anglo-Saxon and the ing. These are Buckingham and Nottingham; both give their names to the county and both contain internal evidence in the ing that they originated from isolated family settlements, whose names they probably bear in the prefix. Huntingdon also contains the patronymic ing and the Celtic dun, a hill fortress, which is found in London, Durham and other place-names. Berkshire is said to derive its name from the "bare oak" beside which the shire mote met. Northamptonshire and Hampshire are counties of Northampton and Southampton respectively, although bearing no relationship with regard to one another. They contain the Anglo-Saxon roots, ham a home, and tun a village, pointing, as do most of these names, to the simplest form of community life, for even a London with its five million inhabitants was at one time a village of modest homes.

In Shropshire we have yet another instance in which the town gives its name to the county. Shrewsbury is an English corruption of the Anglo-Saxon Scrobbesbyrig, or Shrubborough. The Normans, however, corrupted Scrobbesbury into Sloppesburie, whence the modern name of Salop is derived (I. Taylor). This is an example of the use of the names of plants to this purpose, of which many will occur to us, *e.g.* the oak at Acton and Sevenoaks, the thorn at Thorney, the fern at Farnham.

Lincolnshire, also deriving from its city, was Lindum Colonia in the Roman occupation, and no doubt we have here the Celtic lynn, a deep pool, which is also found in London (Lynn-dun).

Cambridgeshire was anciently Camboritum, which latter word contains the Celtic rhyd, a ford ; the former or later form explains itself as the bridge over the Cam, as Weybridge is the bridge over the Wey.

Derbyshire contains a Danish root by (byr, an abode), which is of very frequent occurrence in the names of towns and villages in England (more especially in the eastern counties) which had been occupied at one time or another by the Danes. The first part of the word seems to derive from the German thier, a wild animal, whence our deer ; this makes Derby the village of wild beasts.

Warwickshire contains the Norse wic, a bay, but the Anglo-Saxon wic also means a village.

Finally, Yorkshire. York is described in ancient documents as Eurewic, which contains the name of the river Eure, now known as the Ouse, and wic, a bay or village.

THE ROMANCE OF ARCHITECTURE.

A LECTURE was delivered by the Rev. Walter Marshall, M A., on "English Ecclesiastical Architecture" at the Town Hall, Horsham. The lecturer, according to the *West Sussex Times*, said that he always found people of all classes and opinions to take an interest in old churches, which were so inextricably woven into the life of the nation. The church was to them a living thing ; but without the aid of photography it would be impossible for him to make them realise the details of the beautiful work which in them were handed down to us. All the photographs which would be cast upon the screen he had taken himself. He had photographed 521 churches in England. He did not say this boastingly, but to show that he was generally interested in the subject. The English church and its surroundings served the purpose of a mirror of life. There was the lych-gate where the dead were rested—a very beautiful one was at Welford, near Stratford-on-Avon. Just before, or just after it, were placed the stocks. By an Act passed in 1405 every town and village had to have stocks ; other places were but hamlets. The last time stocks were known to have been used was at Newbury, in Berkshire. Whipping-posts were next shown and discussed. There was one still at Southwold. At one time whipping was much in use; perhaps it might be as well if it were a little bit more so now. Church registers bore witness to these whippings. One records that a man and his family were whipped in 1602, another entry bears date 1710, when payment was made for the whipping of two persons who had the small-pox. The quaint inscriptions on graves were touched upon. Somerset was a wonderful county for churchyard crosses. The Spital Cross at Hexham was shown. After the eleventh century the figure of Christ upon three crosses was depicted as in His agony. At Somerby, Tennyson's birthplace, was one of these crosses, yet in none of his poems, not even in "In Memoriam," did he mention this. Some of the old iron-work upon church doors was very fine and the tracery elaborate. Of genuine sanctuary knockers there were but five examples. The privilege of sanctuary was accorded in 693 and recalled by James I., but this privilege went not one foot beyond the burial-ground. With the Frith Stool, or Stool of Peace, it was different. Its protection extended for a mile at least from its place near the altar in the church, and crosses were placed to fix this limit and guide seekers. If a culprit were caught after he had passed the mile boundary cross, those who took him were liable to pay a fine which grew larger according to the nearness of the capture to the Stool itself, and no money could atone where he who claimed its protection was actually seated upon it. In Yorkshire was to be found by far the largest number of interesting church sundials : an illustration of one at Bishopstone, near Seaford, was shown. The tower was a feature impressing character upon a church, more by its proportions than by lavish ornament. The earliest English church towers possessed no buttresses. In East Anglia were found pre-Norman round towers;

there were three in Sussex built of flint, one of which was near the castle at Lewes and the other two were situated in neighbouring villages. Flints did not lend themselves well to the building of angled towers, therefore these towers were round, and exhibited a clever adaptation of design to local material. In the twelfth century we still found but slight projection in buttress form. Sometimes the towers stood some 15 or 20 feet apart from the church itself. Towards the termination of the fifteenth century some towers were built which terminated in an octagon, the one shown from Boston, Lincolnshire, being 268 feet in height. Sir Christopher Wren had said of the tower of Magdalen College, Oxford, that he would rather have designed it than St. Paul's, there was such dignity and restraint about this tower. In the first instance, a spire was simply a covering or roof for the tower. The spire of Christchurch, Oxford, was built in the thirteenth century. Early in the fourteenth parapets introduced an improvement, then came well-developed pinnacles at the angles, connecting by flying buttresses with the spire. Later the spire rose from an open octagon placed between it and the tower itself. The Sanctus Bell was at first hung outside the church, and was rung to let the people know the moment when the host was being elevated, which many of those in the congregations would not have known but for this bell, because the service was conducted in Latin. Later the Sanctus Bell was hung inside the church at the south end or east side of the screen. In 1549 the ringing of this bell was forbidden. Fonts were always placed near the door in the western part of the church. In form they were usually hexagonal or round, but occasionally square. The latter died out in 1400. The finest specimen of an eight-sided font in England was to be found in Norfolk; the seven sacraments and the crucifixion were represented on these sides. Nearly all fonts were made of stone, but forty or fifty specimens might be seen which were of lead. Only the covers of ancient fonts seemed to have been demolished during the Commonwealth, and one entry showed the amount paid for demolishing "ye thing." Representations of very beautiful ancient font-covers, still in existence and perfect preservation, were shown, and the various methods of raising them pointed out. Chancel screens were symbolical of the division between life here and hereafter. They bore the Holy Rood above them, and might be divided into two distinct types—those which extended right across the church and those intercepted by the chancel arch. Sometimes we saw these screens with unfinished tops. In these cases the tops had been swept away with the crucifix surmounting it at the time of their devastation by the Puritans. Some "interesting localisms," in the form of "reading pews," were exhibited, and a mural monument representing one side of a four-post bedstead with drawn curtains, behind which the dead were supposed to be peacefully resting, was given. The lecturer remarked that he believed he was the first to take a photograph directly from a church monumental brass. This was by far the better plan than that of taking a rubbing, and then photographing merely this rubbing and not the thing itself. The study of the indents for brasses (where the brass itself had been torn away) was most interesting. A view of an altar tomb with its two recumbent figures had been taken with "the camera turned upside down." Chests were used for keeping in safety the sacred vessels and vestments. Some were covered with most elaborate ironwork, having its origin in Flanders, but none dated earlier than the thirteenth century. Some most substantial alms-boxes of oak dated from the reign of James I. By the side of one stood the quaint figure of "Jack o' the Clock." Similar figures were to be found in some churches, and used to strike the hours upon bells, hence their name. Ancient wooden lecterns were not used for the reading of the lessons, as now, but for members of the choirs to sing from. The music was pasted sometimes upon these, and the lecturer sang from an enlarged photograph of one of these the Doxology.

On Wednesday, the 24th inst., the Rev. W. Marshall will be at St. Mary's, Horsham, at 2.30 P.M., and will then point out to those present the special architectural points of note in the parish church.

AN ACT OF MILITARY VANDALISM.

In the south-west corner of the old town of Portsmouth, says a military correspondent of the *Times*, there still stands a remnant of the ancient fortifications. This interesting town was at one time completely surrounded by lines of fortification showing an example of the beautiful bastion trace. The walls were designed and built at the time when the art of fortification reached its zenith. They had withstood at least one siege, and are pictured in De Gomme's map of Portsmouth, published in 1668. There were then five complete bastions and one demi-bastion, with the usual advanced works, ravelins and counter-guards.

Of all this beautiful work only one bit now remains, namely, the "King's Bastion," with its counter-guard in front, called the "Spur Redoubt," or more properly, the "Spur Battery." All the rest has gone. It has been demolished at one time or another to make way for more modern defences or to enlarge the boundaries of a growing town. The "King's Bastion" is the very centre of endless historic associations, and its grassy slopes and picturesque masonry relieve a landscape which is otherwise monotonously flat. All this is now condemned, and the "King's Bastion" and "Spur Battery" will shortly fall a prey to the military contractor. The last remnants of historic defensive interest will then have disappeared.

The history of this bastion is well known. In the time of Elizabeth it had not yet been built; but its important defensive site, commanding the entrance to a harbour which was even then a great dockyard also, was occupied by a work called the "Green Mound" which served the same purpose. The bastion came later and was at first a low, flat work like its neighbours. It has been gradually raised some 12 feet in order to form a "traverse" or protection to the "Long Curtain," upon which are now mounted an imposing array of quick-firing guns. The fine masonry walls are in excellent repair, but the bastion and the spur are no longer used as defensive works. On one face of the bastion there are six small field guns used for saluting purposes, all now painted the fashionable khaki colour. From one of these guns at sunset daily there floats a white curl of smoke, and an echo is thrown back from Haslar beach, as it has been thrown for the last 300 years.

In 1630 Viscount Wimbledon was appointed Governor of Portsmouth. It was he who so quaintly and so ineffectually ordered the citizens to take hats off when passing the image of Charles I., which still stands in a niche of the square tower at the end of the High Street. The bastion was then called "Wimbledon's Bastion," and did not receive its present title until King George III. walked into it one fine day after inspecting the victualling yard close by. George III. paid many visits to royal Portsmouth, but he was by no means the first royal visitor. Plantagenets, Tudors and Stuarts had all preceded him; indeed Charles II. met his bride, Catherine of Braganza, on the beach close by and married her in a chamber of the "Domus Dei," not a hundred yards from the "King's Bastion." At that time the gibbet on which was left hanging the body of John Felton, the sailor murderer of Buckingham, must have been plainly visible from this spot.

On the north side of the bastion there is still a narrow vaulted passage, leading through the "Long Curtain" to the "Spur Battery" in front. This passage is guarded by stout oak doors at either end. The doors are studded with innumerable nails; they swing on great rusty iron hinges and are provided with massive bolts. The way then leads over the broad wet ditch by a narrow iron bridge. The old prints show that this was once a drawbridge. A flight of stone steps gives access to the battery, and beneath the steps is a small room, said to have been used by the keeper of the sluice gates, whose duty it was to regulate the supply of water to the ditches of the fortifications. The steps are still in good order, and, indeed, the masonry throughout has been well cared for by the engineer department. Below the "Spur Battery," on the north side are the "Hot Walls."

In April 1797 the sailors of the Fleet mutinied at Spithead. The mutiny was quelled, but the sailors resolved to give the bodies of their dead comrades who had suffered the death penalty a decent burial in the consecrated ground of Kingston cemetery, hard by to Portsmouth. The Governor of Portsmouth determined to resist their landing, and caused fires to be kept burning day and night under the walls of "Spur Battery" in order that he might oppose the advance of the mutineers with red-hot shot. These preparations for so warm a reception seem to have cooled the sailors' temper, but the walls then received the appellation the "Hot Walls, and have retained it to this day.

Some few years ago the site of the "Spur Battery" was offered by the military authorities to the Corporation of the town, but the offer was for some reason declined. Probably it was accompanied by conditions which would have necessitated the removal of the battery itself, for the acquisition of so unique a specimen of ancient and beautiful fortification could not have failed to prove a source of the greatest interest to tourists and visitors. The value of the relic as a work of art alone, as a specimen of a lost art, should be enough to preserve it; but to this must be added a long roll of historic associations and the exquisite beauty of the scene as the sun sets behind Haslar in streaks of gold and red or clouds of purple splendour.

To-day the destructive hand of the military engineer is laid upon the work of his own forerunners; upon work which proves the genius of those who came before him, and which they and he have preserved for 300 years with tender solicitude. Surely a strong and imperative motive should be advanced for the sanction of such an act of vandalism. Vital necessities, such as those of Imperial defence, may sanction any act. But here the motive is of little importance. A few tons of earth are required to complete a new battery lately erected in the vicinity, and they can be obtained more cheaply by the destruction of these ancient works than by any other means. Another reason has been more lately urged for the demolition of the beautiful "Spur Battery," namely, that it interferes with the fire of guns lately mounted. This is true to a certain extent, but it is only true because these guns have been placed in a position which they ought never to occupy. The remedy lies, not in the demolition of the old work, but in the utilisation of it. For the destruction of "King's Bastion" there is not the shadow of an excuse.

In England there are few examples of the beautiful art of Vauban and Coehorn, for the art never flourished with us, and such examples as we once had have gone, just as the old walls of Portsmouth have gone, and for similar reasons. That little which remains is worthy of the attention of the Society of Antiquaries, a society which has more than once stayed the ruthless hand of the destroyer in this very town.

The history of England has at times crystallised round Portsmouth, as it is apt to crystallise round a great naval and military centre. For centuries this town was the very centre of all military enterprise in England, and noteworthy events seem to have crowded themselves in this little spot where the "King's Bastion" stands. For the military historian no place is so redolent of great deeds, no place so glitters with clear and definite memories. The very names of the great men of action who have stood on this spot would fill the page; the account of their efforts, tkeir victories and their failures would fill a volume. It is, therefore, no mere local interest which demands the preservation of these ancient works, but a national interest. A stroke of the pen may save them; a stroke of the pen may sweep them away.

TESSERÆ.

Curved Surfaces on Geometrical Drawings.

ONE particular in which elevations differ materially from other drawings and from the appearance of the objects themselves is, that no distinction is made between curved horizontal lines and straight ones, so that, whether the part be a plane or curved surface can be understood only from the shadowing, unless there happens to be something that assists in denoting curvature of plan. Thus the mouldings of the base of a column are all straight lines; consequently, without shadow to express rotundity, we could not determine whether they belonged to a flat or round surface unless the shaft be fluted, in which case the flutes will diminish in width according to their distance from the centre. So likewise, in respect to a tower without either apertures or vertical lines regularly placed, we cannot judge whether it be circular or not; whereas, if there be either, they suffice to show that the surface is curved, although represented only in outline, because the apertures and the spaces between them would become narrower in proportion as they are more distant from the centre, and their reveals or inner surfaces would appear. Still, without shadow we should not know whether the surface was concave or convex, except by referring to the plan or by the nature of the subject, there being no difference between the two as regards outline alone. This will be obvious when it is understood that the elevations of curved surfaces are projected, as it is termed, from their plans by lines drawn perpendicularly to the geometrical plane of representation, which determine where the vertical lines to be shown in the elevation will fall and the distances between; consequently, whether the elevation be projected from a convex or concave plan, the result will be the same. When no curved parts occur in the elevation the process just described is superfluous, because the measurements may be taken at once from the plan. The same method, however, it should be observed, is employed for polygonal figures as for circular or curved ones. Thus, of an octagon three sides would be shown in elevation, yet, although of the same width, the two diagonal or oblique ones will appear narrower than that seen directly in front, and the same applies to all oblique surfaces, let the angle they are placed at be what it may, and to such likewise as are oblique to the horizon, as well as to those which are vertical. Hence a roof terminated by gables or pediments at the ends of the elevation will, as regards outline, be drawn as an upright plane, and the sloping lines of the pediment will appear vertical.

Inigo Jones and his Enemies.

The harmony of the triumphs of the Masques and other festivities at the court of Whitehall was a little interrupted by a war that broke out between the composers, Inigo Jones and Ben Jonson, in which, whoever was the aggressor, the turbulent temper of Jonson took care to be most in the wrong. Nothing exceeds the grossness of the language that he poured out except the badness of the verses that were the vehicle. There he fully exerted all that brutal abuse which his contemporaries were willing to think wit because they were afraid of it, and which only serves to show the arrogance of the man who presumed to satirise Jones and rival Shakespeare. With the latter, indeed, he had not the smallest pretensions to be compared, except in having sometimes written absolute nonsense. Jonson translated the ancients, Shakespeare transfused their very soul into his writings. Another person who seems to have borne much resentment to Jones was Philip, Earl of Pembroke. In the Harleian Library was an edition of "Stonehenge" which formerly belonged to that earl, and the margins of which were full of strange notes written by him, not on the work, but on the author or anything else. In the "Stonehenge" are memorandums, jokes, witticisms and abuse of several persons, particularly on Cromwell and his daughters, and on Inigo, whom his lordship calls Iniquity Jones, and says he had 16,000*l.* a year for keeping the king's houses in repair. This might be exaggerated, but a little supplies the want of any record of the rewards bestowed on so great a man. It is observable that the earl, who does not spare reflections on his architect, never objects to his having been maintained in Italy by Earl William; nor does Webb in his preface to the "Stonehenge," though he speaks of Inigo's being in Italy, say a word of any patron that sent him thither. Earl Philip's resentment at Jones was probably occasioned by some disagreement while the latter was employed at Wilton. There he built that noble front and a grotto at the end of the water. Wilton is one of the principal objects in a history of the arts and belles-lettres. Sir Philip Sidney wrote his "Arcadia" there for his sister; Vandyke drew many of the race; Holbein and Inigo Jones imagined the buildings; Earl Thomas completed the collection of pictures and assembled the throng of statues, and the Earl Henry has shown by a bridge designed by himself that, had Jones never lived, Wilton might yet have been a villa worthy of ancient Rome.

Jan Steen.

Of all the Dutch painters of familiar life, Jan Steen is acknowledged to be the greatest genius. The humour and whim in his compositions disclose to us a mind quite distinct from the rest, and the love of childhood displayed in the frequent and inimitably natural incidents of it in his works show that with all his eccentricities there was something good in his nature, and, indeed, unless that be the case the power of any painter, whatever may be his genius to interest us deeply, can be doubted. A very fine picture by this admirable master is in the collection of the Duke of Wellington, and called "The Wedding." Overflowing with obstreperous mirth, its great charm is that of its genial tone. Constable painted a view of a gentleman's house, which he called "A Picture of a Summer Morning, including a House," and this magnificent work of Jan Steen is a picture of a summer evening, including a rustic wedding. No other painter combines such completion of finish at so apparently small an expense of labour as this master does in his best pictures But haste, perhaps occasioned by his necessities towards the close of his life, made him throw off works which, though they might have made the reputation of other men, are scarcely worthy of him. All his pictures have, however, more than those of most painters an apparent artlessness of contrivance, the result not of ignorance, but of that originality which, disregarding common rules, works out its purposes by methods of its own and yet faultlessly. Jan Steen seems, indeed, from the unmistakable evidences of rapidity of production his works present, to have had the whole of his art not only always present in his mind, but at his fingers' ends. He seems to have painted as quickly and as surely as Shakespeare is said to have written. Others have, no doubt, equalled him in this, but who with such results? excepting only a still greater genius, Rubens; nor must we quit Jan Steen without remarking that there is more of personal beauty in his pictures than in those of any others of the Dutch painters, with the exception only of Terburgh and Metzu, though it is beauty, as it should be, not elevated above the sphere of life from which his subjects are mostly taken. When, indeed, Antony and Cleopatra are his hero and heroine they naturally become in his hands a Dutch tavern-keeper and his wife.

The Amazonomachia from Budrum

The idea which these reliefs suggest is that of works executed rather in the decline of Greek sculpture than in its finest period, made rather for subordinate architectural decoration than as the chefs-d'œuvre of great artists. The general composition is not deficient in that union of symmetry of arrangement with variety of grouping for which Greek art is so distinguished, but the action has something of a theatrical character, the attitudes of the figures are strained, the forms meagre and unnaturally slender Admitting that their original beauty has been much impaired by time, weather and mutilation, it is not without a feeling of disappointment that we regard these marbles as examples of the art of Scopas or Praxiteles, or of those thought worthy to be their rivals, Bryaxis, Leochares and Timotheus. But on comparing them with another bas-relief of the same period, that of the Choragic monument of Lysicrates, executed, as appears from the author's name inscribed on it, B.C. 334, we perceive considerable resemblance of style. In both the extreme elongation of the forms and the spareness, if not meagreness, of the muscular development, are characteristics which at once strike the eye. Something of the same lengthiness of type may be traced in the design of some of the silver coins of Tarentum, which we have reason to believe are of this period These peculiarities may be further compared with Pliny's expression when speaking of the changes in style introduced by Lysippus and Euphranor, of the former of whom he says that he made the bodies of his statues "graciliora siccioraque." It is possible that all the reliefs preserved to us may be the work of the less renowned artists, Bryaxis and Leochares and Timotheus, and that, while they may have been disciples of the new school, Scopas or Práxiteles may have executed concurrently designs which we should consider of a far finer character, though in the judgment of Pliny's contemporaries the four friezes were thought to be of equal merit. The story told in these bas-reliefs is a combat of Amazons and Greek warriors. The combat was one of the most favourite themes of the Greek artist. The subject had a peculiar charm for the Greek mind as a figurative or typical mode of expressing the deliverance of the Hellenic people from the Persian yoke. The Amazons, a nation of female warriors, living in the north of Asia about the river Thermodon, are said to have made several expeditions against the Greeks. On one occasion they invaded Attica and were defeated by Theseus, who slew their queen, Hippolyta. It was thus with peculiar propriety that in the same building—the Stoa Poicile—the Athenians represented in one picture the battle of Theseus with the Amazons, the close of the siege of Troy and the battle of Marathon, thus commemorating in one great design their mythical and historical victories. We find this subject, so congenial to the Greek mind, repeated in a variety of forms. Pictures of combats of Amazons adorned the Temple of Theseus, and the same myth was represented on the shield of the statue of Minerva and the base of the throne of Jupiter Olympius, the works of Phidias; on the frieze of the Temple of Apollo Epicurius at Phygalia, and on a number of Greek fictile vases which have been preserved to us. Turning from Greece to Asia Minor we find the battle with the Amazons represented on a variety of monuments, which probably commemorate the victories of the Greeks gained in Asia Minor at the siege of Troy and on the various invasions of the Amazons. They are peculiarly connected with Ionia. The city of Smyrna in the first century of the Christian era claimed them as its founders. At Ephesus they are said to have dedicated the statue of Diana in her temple.

Harmony of Colouring.

It is a great error, and one so obvious that but for its widespread influence would scarcely deserve mention, to suppose that the quality of colouring, like that of the mere colours, depends upon its purity and brilliancy, and not alone on its harmony. Not so; that key of colouring is alone good which is best adapted to awaken in the mind of the observer those feelings which are in accordance with the subject illustrated; and were the above narrow doctrine to prevail, whatever success might be attained would necessarily be owing to the care of the man who makes the colours rather than to the skill of the artist who uses them. The works of Velasquez and Rembrandt, though low in tone, are as wonderful examples of colouring as are those of Giorgione and Titian. It has been loosely asserted by the advocates of bright colouring that it is comparatively easy to succeed in a negative key of colour, but such a belief can scarcely be founded on experience, for no artist who has devoted himself to the acquirement of that quality will deny that the difficulty of producing a picture which shall impress the spectator by its wonderful sensation of colour is much increased by the absence of all bright and brilliant hues from the canvas. Moreover, there is a sentiment of colour and a sentiment of effect, which are the property of the mind alone, and which are not to be acquired by applying the principles of the Venetian or Dutch schools to any subject without discrimination. Colour, that language of the painter, must be learned from the observation of nature and not from the precepts of art, and its eloquence will ever be proportionate to its propriety. In this, as in all the other qualities of painting, truth has its limits; and if art seeks to overstep them it will only plunge the deeper into the mire the more it attempts to advance beyond that immutable boundary.

Etruscan Art.

Architecture did not play an important part among the Etruscans, although they used occasionally all styles of building, from the so-called cyclopean walls to the most correct arching. But they did not build much in stone, probably for want of suitable material, as the marble quarries of Luna, the modern Carrara, were not discovered until after the end of the Roman Republic. In other departments of art they were, however, extremely active. Immense numbers of ornaments of bronze, gold, silver and ivory have been found in graves, and also great quantities of pottery. A necropolis has been discovered near Tarquinii, the modern Corneto, which is believed to have spread over sixteen square miles, and to have contained some 2,000,000 graves. The quantity of painting found here testified to the Etruscan love of artistic decoration. All works which have been brought to light show that Etruscan art, from its beginning until the sixth century B C, was strongly under Oriental influence. The Etruscans had a lively trade with the East, and according to one theory they are of eastern origin. Afterwards Greek influence became more and more apparent; but, nevertheless, Etruscan art always retains characteristics of its own—soberness of conception, a certain heaviness of form, and an emphatic realism, with no fear of representing truthfully what is unsightly in nature. The wolf of the Capitol shows that at first the Romans were entirely under Etruscan influence: in fact, the few works of art mentioned in history seem to be taken directly from Etruscan models. This was certainly the case with the colossal statue of Jupiter in the temple built on the Capitol by the Tarquins. It was the work of Volcanius of Veii, and represented the god seated on his throne. It was made of terra-cotta, and coated with red paint, which was often renewed. There was a bronze wreath on the hair, and an embroidered garment on the body. The quadriga on the top of the temple was also made of terra-cotta. Where Pliny mentions this he remarks that a great many such terra-cotta statues were still in existence in his time, and were even to be seen on the gables of some of the Roman temples.

Correspondence

Stained Glass.

SIR,—Permit me to correct a small typographical error in the last instalment of "Stained Glass in England since the Gothic Revival." Line 21 from the top on page 235, instead of "In the chapter-house at Worcester" should read "In the chapter-house at Westminster."—Yours faithfully,

T. F. BUMPUS.

October 13, 1900.

GENERAL.

Sir Lowthian Bell, Bart., F.R.S., of Northallerton, has been elected president of the Institution of Junior Engineers, in succession to the Hon. C. A. Parsons, F.R.S., of Newcastle-upon-Tyne.

The Forthcoming Winter Exhibition at the Royal Academy is to consist of pictures by English painters who have died within the last thirty years.

The Tapestry representing the "Arms of the French Republic," designed by M. Joseph Blanc, and now in the Paris Exhibition, is to be hung in the Elysée, the President's official residence, with other pieces designed by M. Libert and M. Binet.

The French President has awarded the Legion of Honour to the cities of Paris, Bazeilles, Lille and Valenciennes, as a memorial of their services to the Paris Exhibition.

Walpole Park, recently purchased by the Ealing District Council from Sir Spencer Walpole for 40,000*l*., has been renamed Perciva1 Park, after the late Miss Frederica Percival, daughter of the Prime Minister who was assassinated.

M. Casimir-Perrier, former president of the French Republic, presided at the opening of the Ecole Spéciale d'Architecture in Paris.

The Bridges Committee of the London County Council recommend that an authority on Gothic architecture should assist Sir Alexander Binnie in giving a suitable architectural character to the plans for the new bridge which is to take the place of the present Lambeth Bridge.

The Wall Paintings about to be placed in the ambulatory of the Royal Exchange are, (1) "Modern Commerce," by Mr. Frank Brangwyn, given by Mr. Thomas L. Devitt; (2) "Sir Richard Whittington's Charities (1419)," painted by Miss Henrietta Rae (Mrs. Ernest Normand), donor Mr. John Paddon; (3) "King John signing Magna Charta (1215)," by Mr. Ernest Normand, and presented by Mr. Abe Bailey. In addition to these there is another picture in progress by Mr. E. A. Abbey, R.A., the subject being "The Award of Sir Robert Billesdon (Lord Mayor, 1483) in the dispute as to precedence of the Merchant Taylors' and Skinners' Companies." This fresco is the joint gift of the two named companies.

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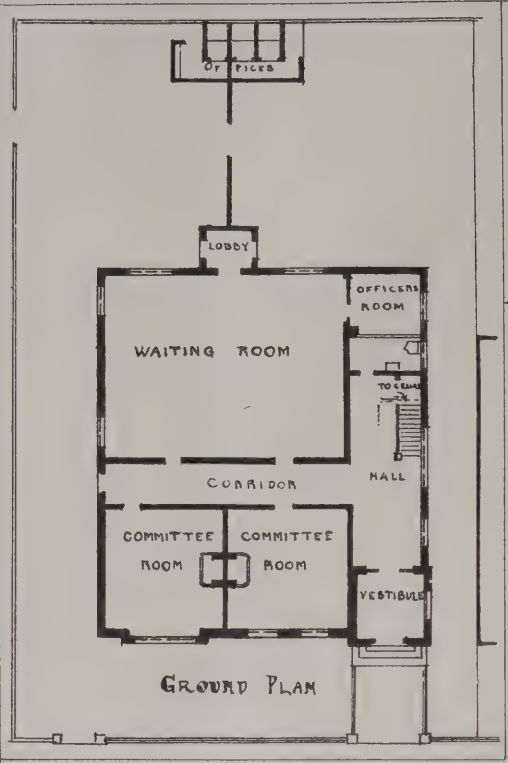

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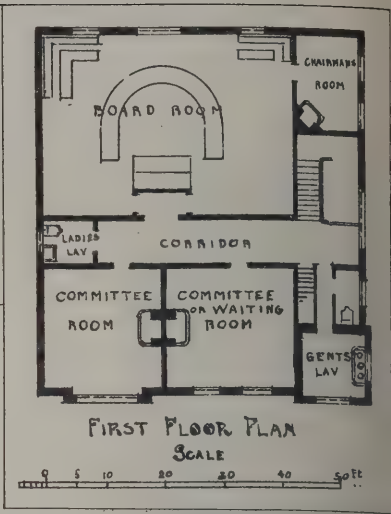

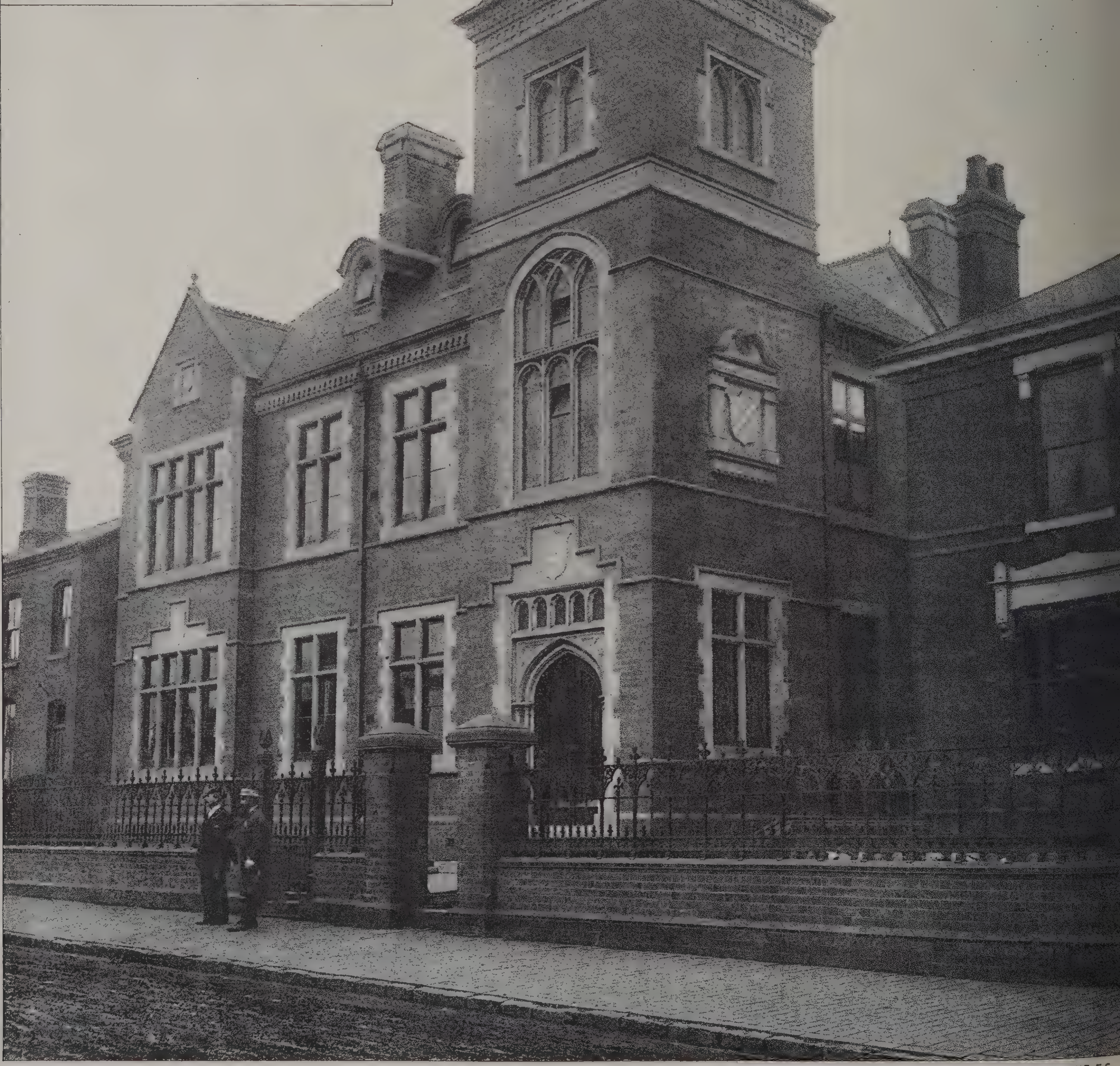

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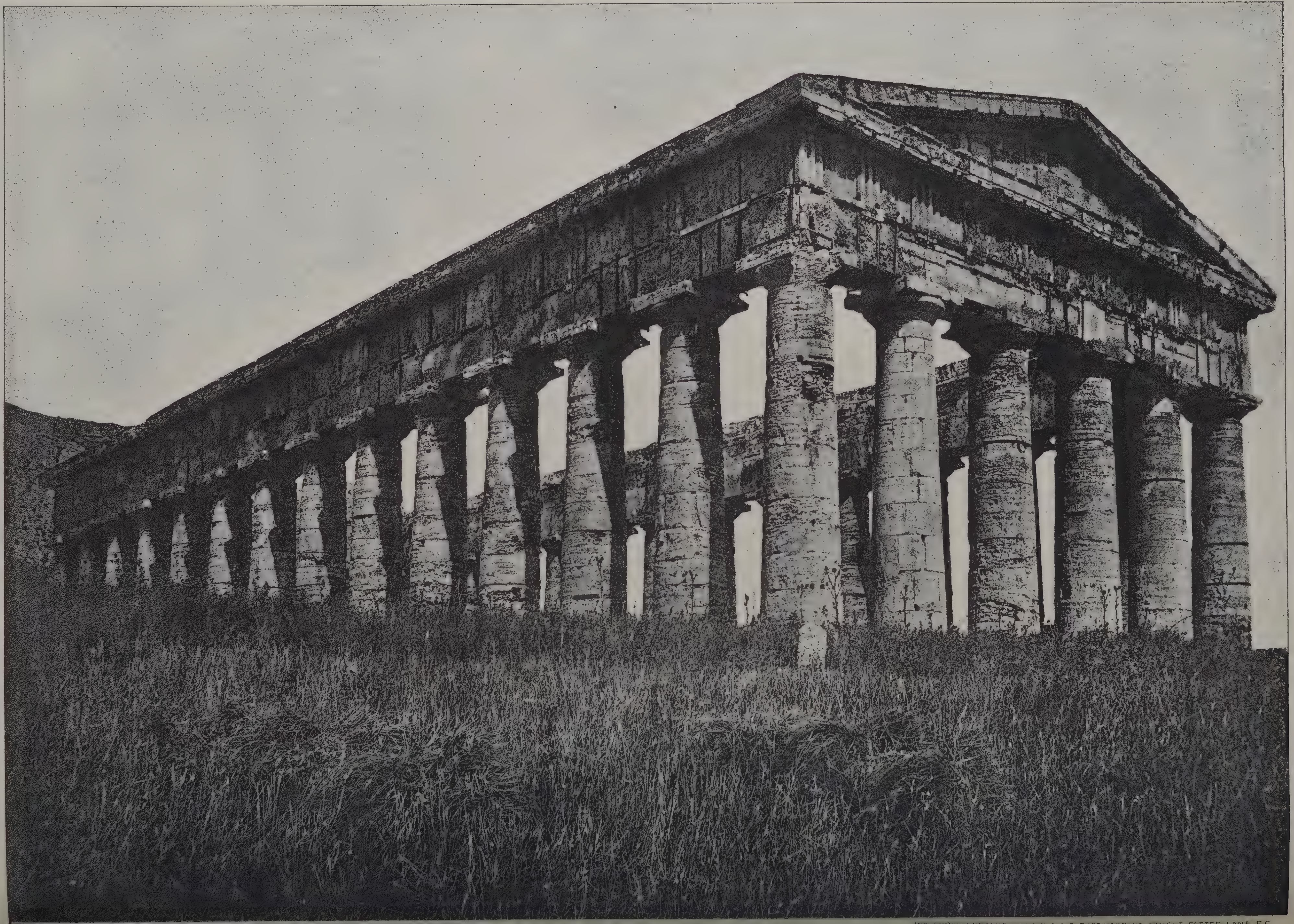

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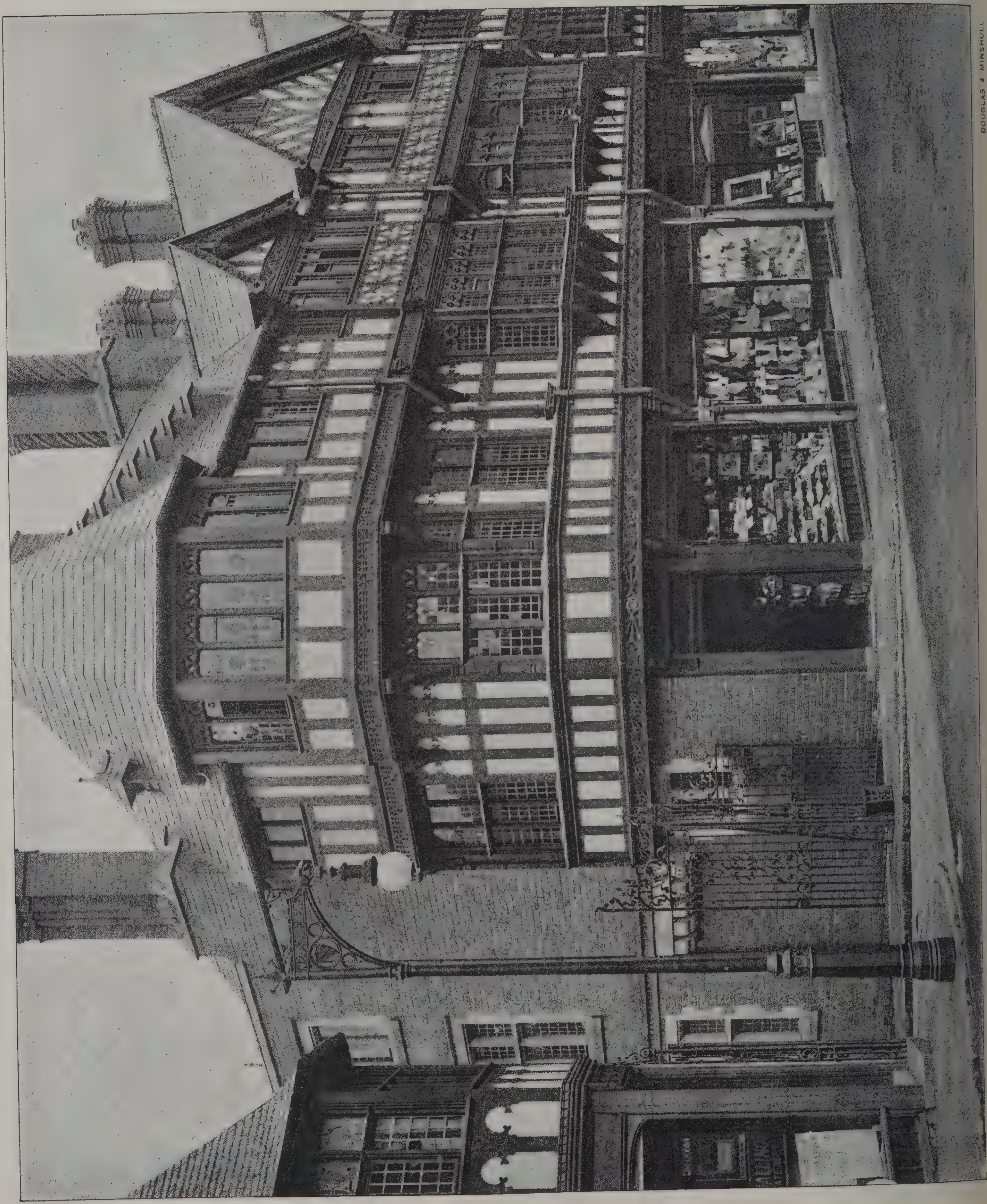

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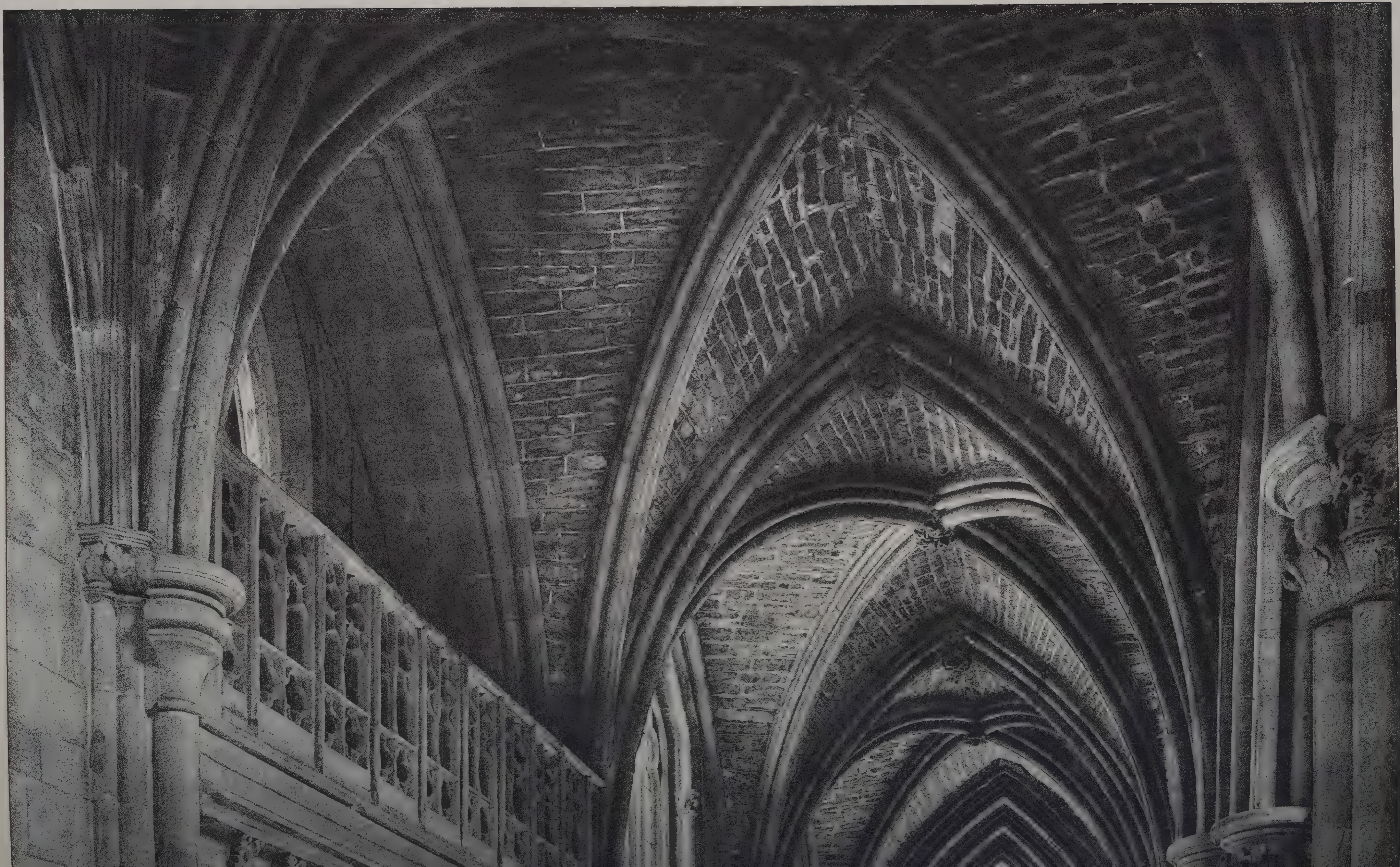

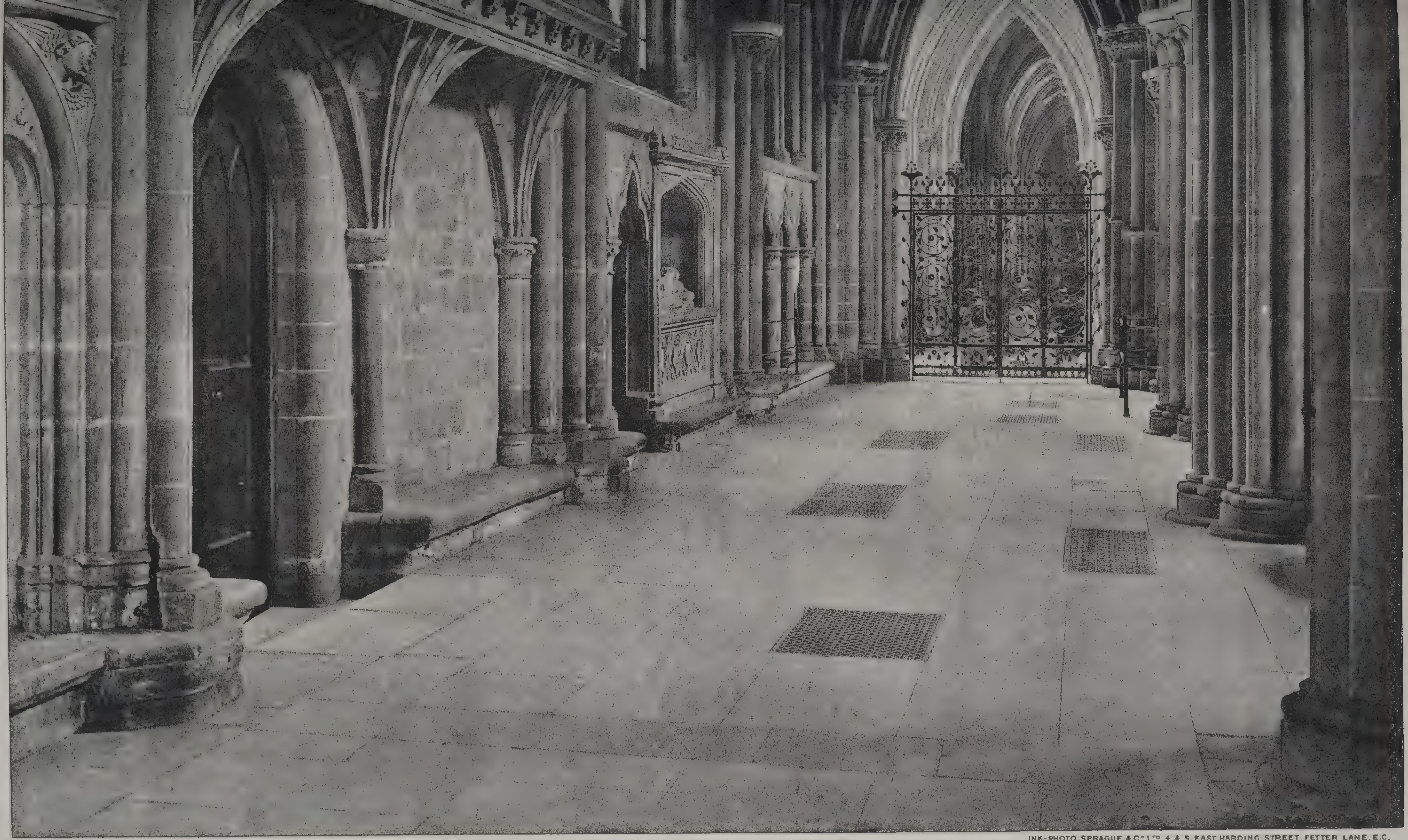

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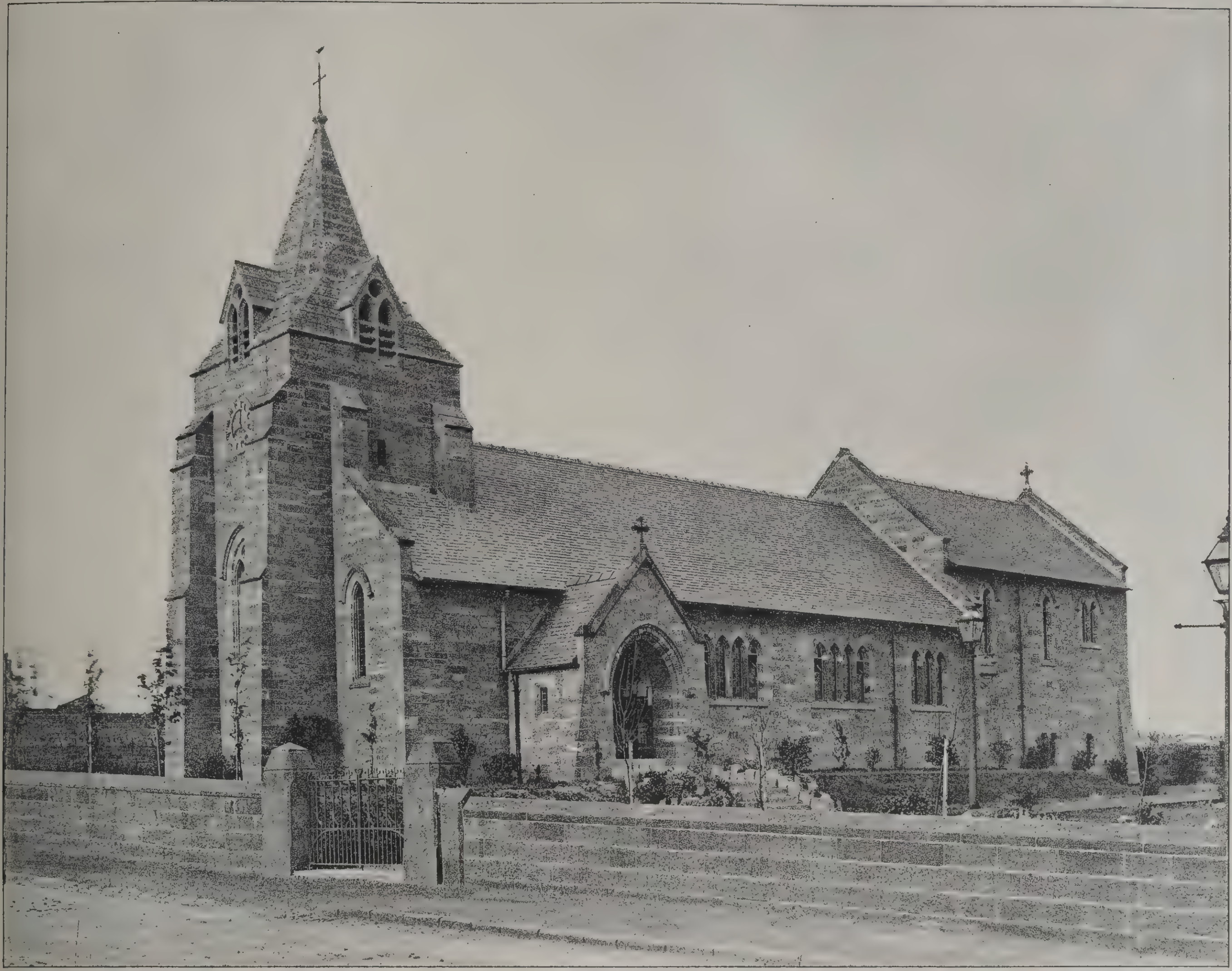
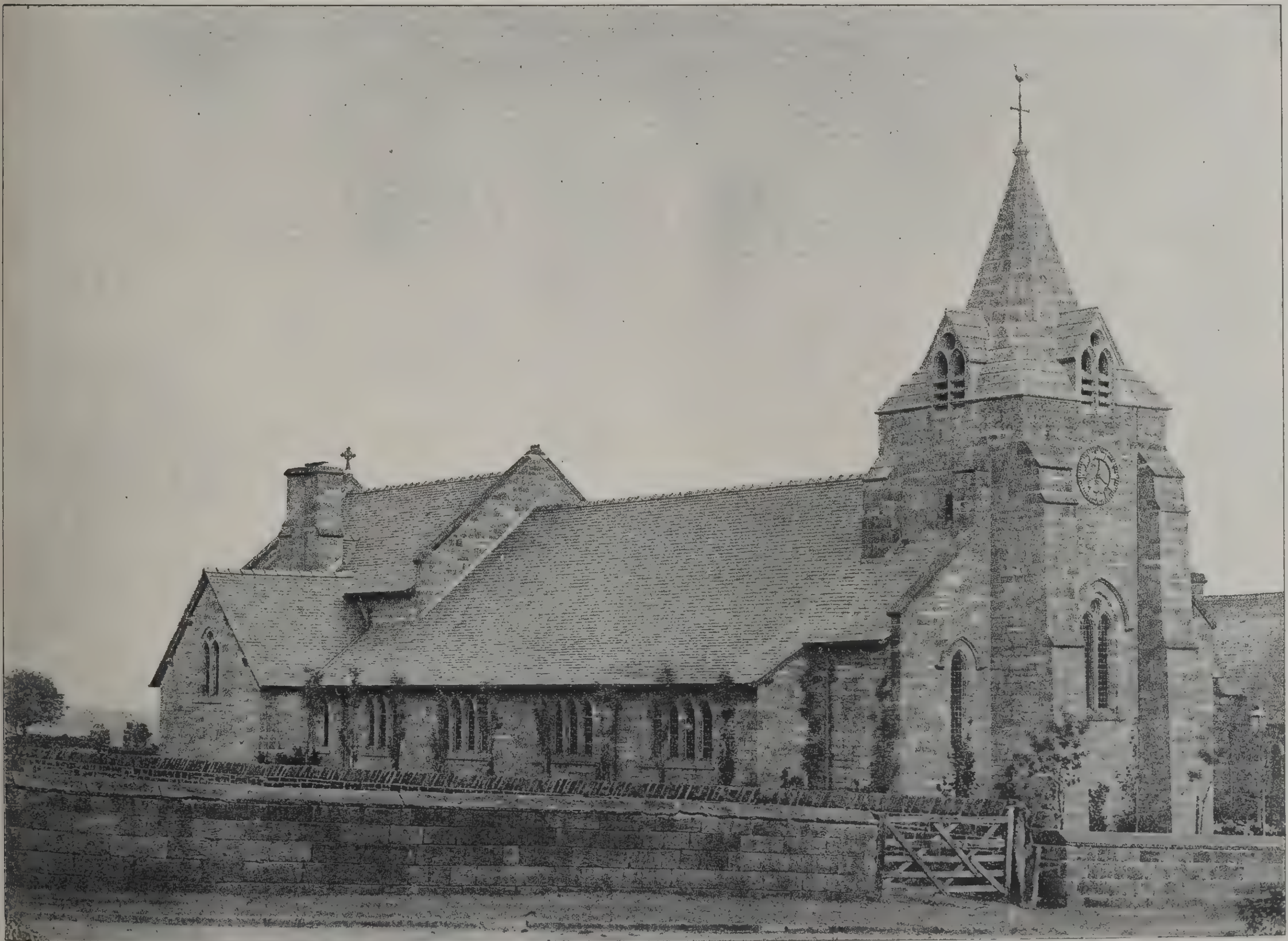
Cathedral Series, No. 304.—Lichfield: South Choir Aisle looking West, showing The Minstrel Gallery.



SOUTH WEST VIEW



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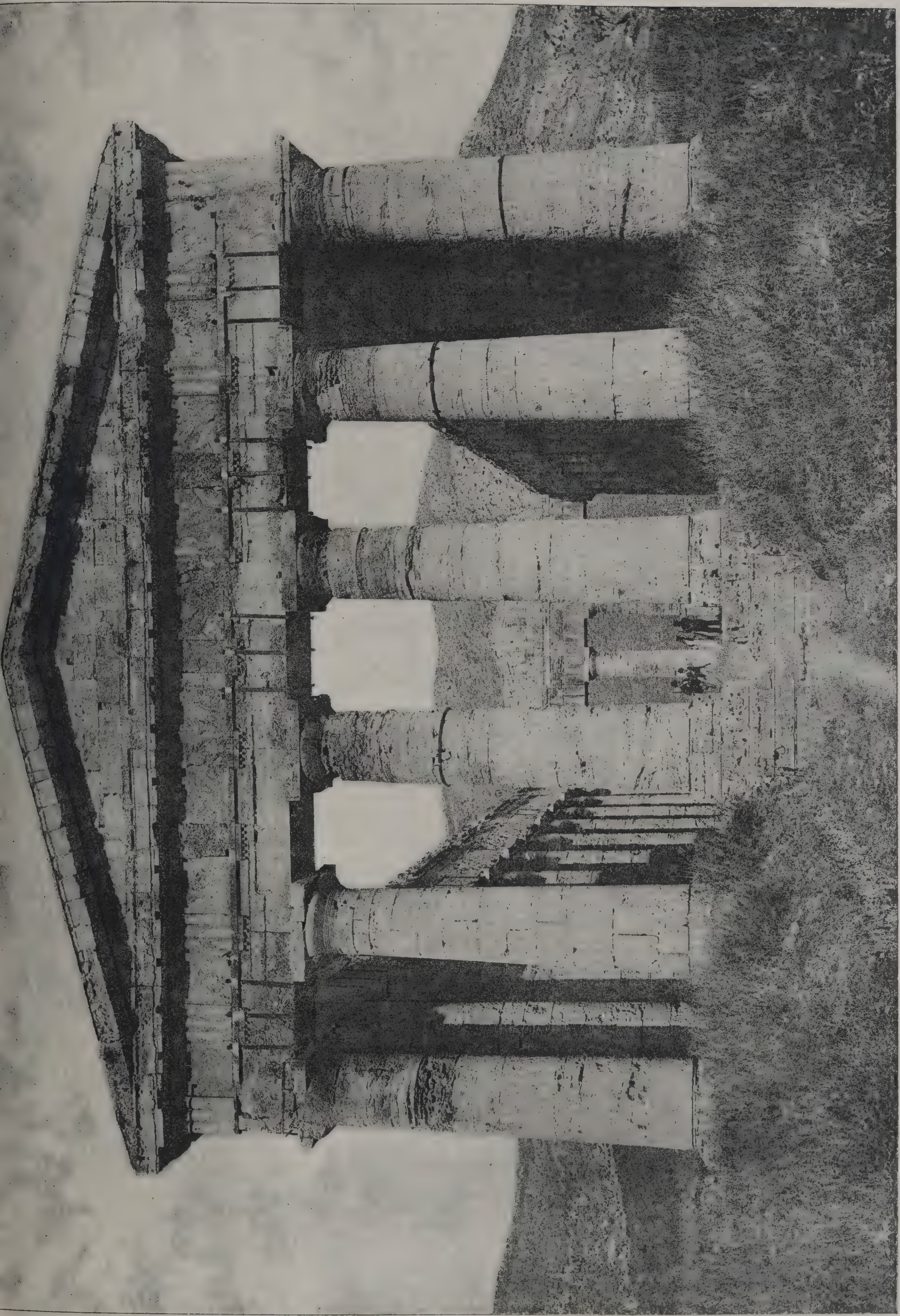
J. DOUGLAS

NORTH-WEST VIEW.

ST. JOHN'S CHURCH, WESTON, CHESHIRE



THE TEMPLE OR BASILICA OF SEGESTA.

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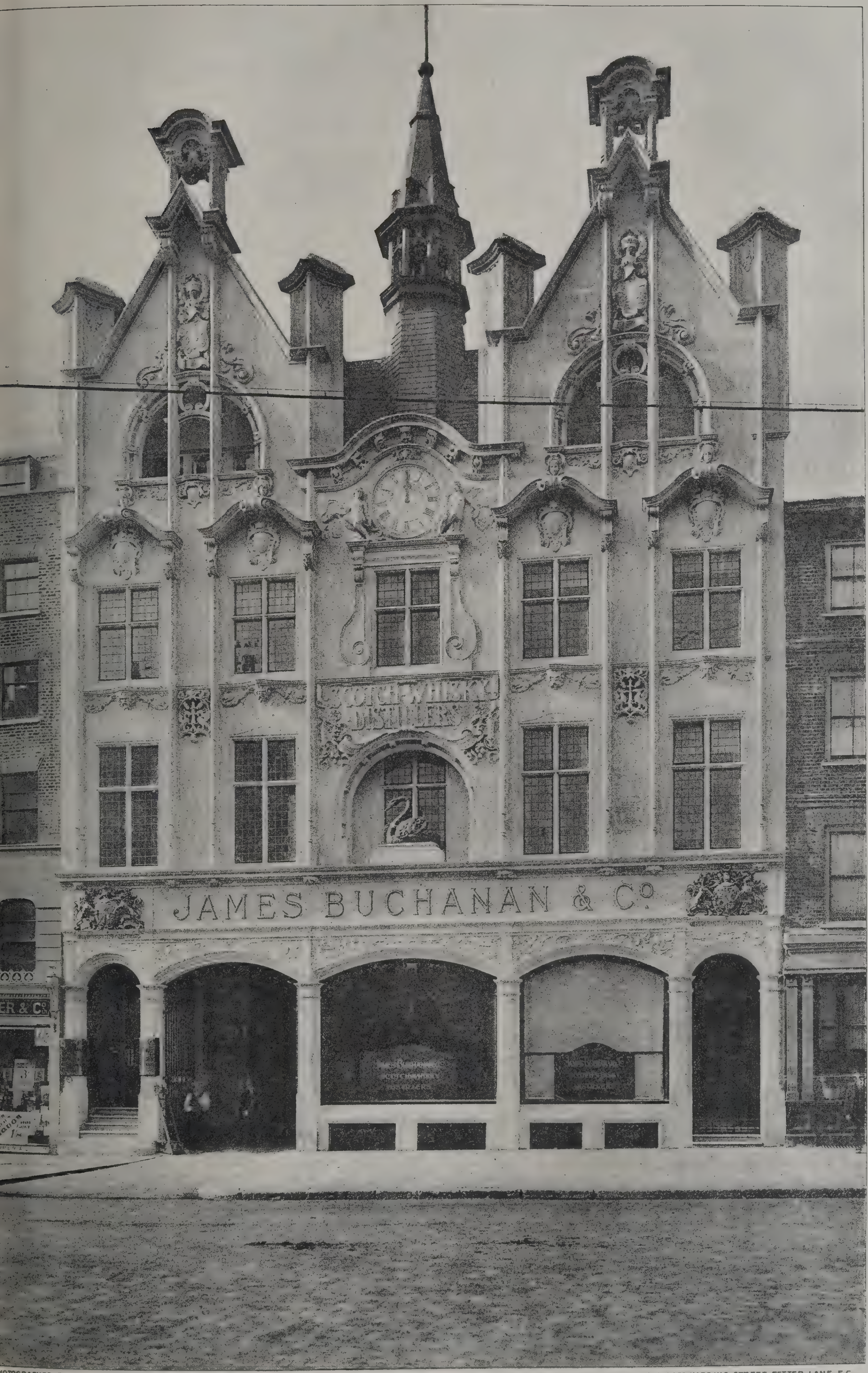
The Architect, Oct 19th 1900



OTOGRAPHED BY S. B. BOLAS & Co 77, OXFORD STREET, W.
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NEW BUSINESS PREMISES, HOLBORN.

Messrs. TREADWELL & MARTIN, Architects.

The Architect.

THE WEEK.

Sir Thomas Drew has been elected to the onerous office of president of the Royal Hibernian Academy. He is not the first architect who has occupied the chair. The founder of the Academy and its first president was Francis Johnston, who designed some important buildings in Dublin, and Sir Thomas Deane was president from 1866 to 1868. The position, if distinguished, is, however, unenviable, for the prospects of the Academy are enough to make the stoutest heart become desponding. There is a small grant from the Government, which is altogether insufficient to meet the inevitable expenses. The charter of the Academy is full of conditions which are unsuited to our time. The annual exhibitions which elsewhere are the chief support of similar institutions are not of much profit in Dublin, for the public only attend in the evening, when the charge for admission is in pence. But the great obstacle to success is the indifference of the Irish people to the promotion of art. Whether Sir Thomas Drew's influence and courage, which have been fortunate in guiding other societies, will bring about a different condition of affairs remains to be seen, but he deserves the sympathy which is accorded to all those who bravely undertake a forlorn hope.

It was specified that the masonry of the new City Hall in Cape Town, of which Messrs. Reid & Green are architects, was to be constructed of Steenpan stone. Owing to the delay in supplying the stone, the architects have asked whether the Council would permit the contractors to complete the plain surface of stonework of the building up to the first floor level in granite instead of in Steenpan stone, the moulding and ornamental parts of the work as well as the upper storey façades to be completed in Steenpan stone as already agreed. The works and improvements committee have approved of the arrangement. The contractors will be able to proceed with the work without delay. It is also anticipated that by the time the first floor level is reached an ample supply of Steenpan stone will be available.

A curious point has arisen in Ireland in connection with the Public Health Act. A gentleman who erected a cottage in the village of Hackettstown was summoned by the Baltinglass District Council for not employing eave-gutters and thereby causing a nuisance. He was ordered to set them up and to pay 4*l.* 4*s.* 6*d.* costs. The defendant appealed to the quarter sessions, when the case was heard by Judge Kane. The medical officer of health testified that he considered the absence of eave-gutters to be a nuisance, and the Clerk of the Poor-Law Union gave similar evidence. The judge said he could not see anything in the Act prescribing eave gutters, and he was informed that reliance was placed on the general section. On behalf of the appellant it was submitted that subsection 1 in the opinion of Mr. Justice Wills referred only to premises which were dilapidated, dirty, or out of order. But the new cottage could not be taken as belonging to the category. The nuisance was not described in the summons; it was simply said there was an absence of eave-gutters, and that could not constitute a nuisance. Judge Kane declared the notice, summons and conviction to be alike illegal, and allowed the appeal, granting 7*l.* as costs.

For nearly sixty years the name of William F. Wakeman was well known in connection with Irish archæology. He died last week in his seventy-eighth year. He was one of the men whom George Petrie gathered round him when he obtained charge of the antiquarian investigations in connection with the Ordnance Survey of Ireland. Under Petrie's direction they were all taught to realise that archæology could have a scientific basis. Petrie's predecessors, and the majority of those who took an interest in the past at the time, trusted mainly to imagination in order to interpret the works which were inspired by the imagination of a still earlier school. Petrie preferred the evidence which could be afforded by a few ruined oratories with walls in which no mortar was used, or a few examples of metalwork, to all the romance about sun worship or nature worship, or the connection between the Irish and the Tyrian rovers. Next to Petrie the best draughtsmen were Wakeman and Du Noyer. When the official recognition of archæology came to an end Du Noyer joined the Geological Survey, and his pencil was employed to delineate the peculiarities of Irish formations in days when photography was confined to portraiture. Wakeman taught drawing and painted pictures, but his heart was in archæology. On the suggestion of a very shrewd publisher he compiled a handbook of Irish antiquities, especially those to be found in the neighbourhood of Dublin, and the work met with as much success as could be expected from any non political writing in Ireland. He brought out other guide-books, and as at the time there was an excellent wood-engraver in Dublin, justice was rendered to his drawings. His pencil was sometimes utilised for the essays of contemporary archæologists, for his name was a guarantee of accuracy. Mr. Wakeman was the last representative of the Petrie school, whose services to archæology can hardly be overestimated.

A few years ago we published some illustrations of works by Albrecht de Vriendt, the Flemish historical painter, and among them were *Charles V. in the Cloister of St. Just*, the *Excommunication of Bouchard of Avesnes*, and *Paul III. Contemplating Luther's Portrait.* It is with much regret we have to record his death, in his fifty-sixth year. He was a native of Ghent, and he was only seventeen when he exhibited his admired painting, *St. Elisabeth of Hungary in Prayer.* Other examples of his work are to be found not only at Antwerp and Brussels, but in Munich. With his younger brother, Julian, who was also an admirable artist, he became a pupil of Baron Leys, who was at the time the head of the Flemish school. Albrecht devoted himself to historical and secular subjects, while his brother was attracted by those which were scriptural and ecclesiastical. In 1892, on the death of Verlat, he was appointed Director of the Royal Academy of Antwerp. During the last eight he was an enthusiastic official, and many young artists will remember his acts of kindness to them. Latterly he was engaged on the wall-paintings for the Hôtel de Ville of Bruges, but he was carried off before he was able to complete a work which was specially suited to his talents.

The competition for the memorial statue of Alexander III., which is to be erected by the Bulgarians and placed in Sofia, has been determined. The jury was presided over by Prince Ferdinand. Among the members were M. Antonin Mercié, the French sculptor, Signor Ferrari, the Italian sculptor, and M. Bach, of the St. Petersburg Academy. The first prize was awarded to Signor Zocchi, who represents the Czar as a liberator, with groups of soldiers around the pedestal. Among the recipients of prizes are M. Mallet, architect, and MM. Lanoux and Bovery, sculptors.

There is likely to be some opposition to the proposal of the Manchester Corporation respecting the Art Gallery. When the Act was passed in 1882 it was arranged that in a future time fourteen members of the committee having charge of the Art Gallery in Mosley Street should belong to the City Council, and that seven members were to be elected from the governors then living. The time has now arrived when the arrangements require some alteration. The Corporation desire to have powers to select the seven members from a wider circle than the surviving governors of the Royal Manchester Institution. It is always easy to get up an alarm about the grasping spirit of a public authority. London, for example, is deprived of subways because the gas companies and the water companies profess to believe that their property would pass out of their possession and be seized by the County Council if the use of subways became obligatory. In like manner the apprehension is fostered in Manchester that the Corporation want to have the whole representation of the Art Gallery in their hands, and in consequence the project has been condemned at a meeting of owners and ratepayers. As far as we can perceive, the gallery could not be under better control than that of the Corporation.

INSTITUTE OF PAINTERS IN WATER-COLOURS.

THE exhibition of the Royal Institute of Painters in Water-Colours, which was opened on Monday, consists of "studies and sketches." Drawings of that class are an innovation in the Piccadilly galleries, although familiar enough in Pall Mall East. In both cases it is to be regretted there is no definition of what the artists mean by studies and by sketches. By the majority of people in the case of landscapes it is supposed the sketches are representations made out-of-doors and consist of direct transcripts from nature or records of effects on the draughtsman's mind. In the Water-Colour Society the tradition makes it necessary for every drawing to become suggestive of deliberative and complete work, and in consequence it is almost impossible to distinguish between studies and drawings. But as much greater latitude is allowed in the Institute there would be little difficulty in arranging that studies and sketches should not be identical in character with the drawings seen in the summer exhibitions. There are undoubtedly a great many works to be seen at the Institute which can be accepted without any misgiving as sketches, but there are also a great many others which, although welcome, have no quality which is suggestive of mere sketchiness or hasty production in order to seize evanescent effects. Take, for example, Mr. E. G. Warren's *Pastoral*. It is a very large and excellent drawing of a scene in a forest, and the price charged for it, 120*l.*, is not excessive. But on what principle can it be classed with other scenes on the same wall, of which the value varies from 2*l.* 2*s.* to 8*l.* 8*s.*? It would have been an advantage if all the members had imitated the practice of Mr. Bernard Evans. He exhibits about a dozen drawings, mainly of Cannes, all of which are offered at the uniform price of 15*l.* 15*s.* But on every one he writes in a bold clear hand the description and when it was painted. In that way it becomes manifest to all that the drawings, however excellent, are sketches, and have not been elaborated in the studio. Near them is another series of sketches by Mr. Joseph Knight. They are in opaque colours. If we could be confident they were painted as the artist sat in front of the various scenes, we must admire the power of generalisation and the decision of hand which can present a landscape by means of a few broad, smooth strokes. But on further consideration it seems more likely the effects were produced by the artist in his studio with the aid of sketches of a different character. Mr. Wimperis shows about twenty excellent drawings, most of them from Sussex. But as each has a commonplace blue and white sky, which could have been produced simultaneously on all without any alteration of the wash, the drawings necessarily appear to be more or less conventional. Probably the ground was put in out of doors, and the sky added at ease at a subsequent time within doors. A great many other artists' skies are likewise without any character, and it is needless to say that the representations of nature are affected by the weakness. It would, perhaps, be too severe to insist on all artists producing such elaborate and impressive cloud effects as Mr. Arthur Severn has recorded, and which exemplify Mr. Ruskin's teaching. But what has been done by Mr. James Orrock and by Mr. Edwin Hayes could surely be attempted by younger artists. Both recognise the importance of skies, and endeavour to realise the theory that in a landscape air, land and water should be treated with equal care if the scene is to have unity. As the studies and sketches by each artist are generally hung together, the defect we have noticed and which unfortunately is too common, becomes more marked than if the drawings were separated.

As there are over 700 works exhibited the notices we can give must be very summary. The collection begins with some sketches by Mr. Phil May, mainly of Dutch folk. They are very slight, but apparently are drawn from life, or rather from garments which have excited his risibility. The late Towneley Green is represented by figure drawings as well as by landscapes. The two bailiffs *In Possession*, if elaborated, would have been effective, for there is a contrast which is amusing between the watchfulness of the younger officer ready to combat with all comers and the bored look of his senior. *The Guitar*, a Spaniard tuning his instrument, is a good specimen of the late artist's work. Among his landscapes *The Edge of the Wood*, which is reminiscent of Mr. North's autumnal scenes, is the most complete. Mr. St. George Hare has four well-finished heads which are supposed to typify *The Seasons*, and which may be portraits. Mr. Frank Walton contributes views from Cornwall and the Channel Islands, coast scenes in which he endeavours to suggest the character of the rocks. Count Seckendorff, of Berlin, sends three views from Venice, Rome, and Drumlanrig, in Scotland, of large size, lightly painted, but with local characteristics, and like so many other things made in Germany, wonderfully cheap. Mr. Claude Hayes has a variety of sketches, and the treatment varies also to correspond with them. *A Road on Barnes Common* may appear too rural for a suburban scene, but there is no exaggeration in it. Mr. Edwin Hayes must have felt he was out of his element in drawing the *Harbour of Savona, Italy*, although the scene has more architectural interest than the majority of harbours. But it is a statical subject, and he is all for dynamics. We prefer his "fresh breezes" in Guernsey, Hastings, Gorlestone, &c., which are really suggestive of active force. In the *Sunset, Porthcawl Coast*, there are glimpses of richer colour than is usually met with in his drawings. It must be difficult for an artist who has during so many years confined himself to one class of subjects to discover novel scenes. But small as are the views they reveal a desire to be independent of memory and to represent what is seen with fidelity. Mr. John White, as usual, is very careful in rendering scenes in the Dartmoor district. Mr. E. H. Fahey has widened his field by going to Hyères, and a comparison of those sketches with others in England will show an honest effort to depict the condition of landscape in both places and the difference in the lighting. Mr. W. Langley sends several painstaking drawings from Dartmoor and Cornwall, but he also would be benefited by a foreign tour. Mr. Charles Dixon has suggested the brightness and crowds of *Southsea Beach* on a summer's day in the season. It would serve as a companion to *Waterloo Bridge*, in which that strange compound, the London atmosphere of a sultry day, is expressed, and evidently with regard to its artistic rather than its sanitary conditions. In the *Embankment* the Houses of Parliament are distorted and dwarfed. Mr. J. R. Reid uses opaque colours with facility, and his Scottish scenes have the character of true sketches. It was a curious whim of Mr. W. W. Topham to introduce a view of the crowded Hornsey churchyard along with pictures from Venice, Rome and Pompeii. Mr. Wollen has two vigorous pencil drawings of events in the Transvaal war. It is, however, a misfortune that, dramatic as may be the incidents in the South African campaign, they must be less affecting than any of those derived from preceding wars, because the enemy is invisible or only seen in small parties. Neither Detaille nor De Neuville could make scenes of ambush in the Franco-German war successful. Mr. Yeend King's sketches are very pleasing, and from their character it might be easily concluded he was endeavouring to wean himself from his habitual preference for green.

The executed designs for stained-glass windows by Sir J. D. Linton are likely to give rise to much comment among experts. He has hitherto given so much attention to costume, and has been so successful in rendering character, much must be expected from him. It is with some hesitation we express our opinion that his figures look as if they were commissioned by some Munich manufacturer. The majority of the figures do not come up to the average English standard. They are all uniform in size, and we suppose were prepared for some Broad church where the utmost catholicity was tolerated. They comprise Bishop M., Alcuin, John Wesley, St. Edmund the Martyr, Bishop Latimer, Dr. Arnold, Bunyan, Tennyson, Milton, Henry Martyn, Wyckliffe, Cædmon, William of Wykeham, King Alfred, St. Columba. Bishop M. would serve for Mr. Chadband in gaiters and apron. St. Edmund appears as indifferent to the arrows which pierce him as if he were stuffed with wool. William of Wykeham has grown so fat on architecture, the model in his hand could be taken as a piece of confectioner's construction, and St. Columba somehow has got hold of a cope corresponding in weight and gorgeousness with those which were produced several centuries later than his time. Mr. Borrington contributes several bright Swiss views. Mr. Stock's *The Reunion*, showing a man and a woman—they might be Paola and Francesca—meeting in another world for their endless embrace, gives a suggestion of fine lines and splendid colour. So promising a subject should not have been prematurely brought forth and disposed of in an eight-guinea sketch. Mr. J. B. Partridge sends two drawings of Sir Henry Irving as Hamlet and Mephistopheles. His *Hall Caine, Esq.*, has been made familiar by a reproduction. But a new phase of the artist's ability is shown by a *Sketch of a Child*, *An Evening Sky*, *Les Halles, Malines*; and *St. Jean de la Haize, Avranches*, which may serve as correctives of theatricalisms.

In the Central Gallery we have the President's series, which will be attractive from the variety and skill. Mr. Gregory's affection for the Thames is of old date. *Under Harleyford Weir* suggests the sudden fall of water that is not altogether clean, and therefore differs in appearance from what is usually seen in waterfalls in exhibitions. *Fisherman's Cottage, Pangbourne*, must be a desirable residence for summer parties. *The Lady of the Launch*, who is seen seated in a wicker chair gazing at some neighbours, might be called *Who are They?* and the half defiant, half resolute look is represented with the finish of a miniature. Few painters, especially in official positions, would have the courage to make a subject out of a compound structure that gipsies would scorn, and call it *Thatch, Shingle and Corrugated Iron.* But Mr. Gregory has a weakness for playing with ugliness. The only drawing which is not entirely successful is the *Back of the Feu House, Perth*, for the grass is not the lovely green of Perth. Mr. Bundy in *A Macaroni* presents a humble dandy, part of whose clothing is made of a very vulgar chintz. From the absurdity of the figure it ceases to be humorous. Mr. Hal Hurst has a brilliant nudity floating in a shell, which is called *In the Lower Depths.* Mr. John Fulleylove's *St. Paul's Cathedral* is a genuine sketch in pencil, very bold and rough; but the perspective is realised, and the long line of the nave as seen from the choir is suggested as well as in some more elaborate drawings. Mr. David Greene's *The Lighthouse* depicts the sea near the Eddystone in a blue so light it may be called silvery. Mr. Dudley Hardy's *A Halt* is a large drawing on brown paper of a party of Arabs. It is very boldly outlined, but is out of keeping with the drawings surrounding it.

In the East Gallery we see brought together about forty architectural drawings by Mr. Fulleylove, probably the largest collection ever seen in an exhibition from one hand. The artist has surprising impartiality, for it would be difficult to say what style of building he most admires. Many are from Athens and other parts of Greece. Some of them are disappointing, for we only see fragments of columns, and *Sparta* is a collection of modern houses. The artist occasionally is of opinion that a part can serve as well as a whole. Who, for example, could expect that so vast and important a building as the *Law Courts, Brussels*, has to be suggested by a few feet of the lower terrace, and that the drawing is filled with a collection of the mean buildings in the vicinity? Sleepy old Sandwich means the entrance gate as seen from the bridge. *Carisbrooke Castle* is also a gateway. The most interesting of the views are those from King's Lynn, Cambridge, and Hampton Court. There is a coloured drawing of the choir of St. Paul's taken from a point of view in a line with the Wellington Monument, but in it detail is disregarded. Mr. Henry Ryland is one of the very few members who have attempted figure studies. The drawings are in pencil; the models are handsome and wear graceful Greek drapery. If votes could be taken about the relative merits of the landscape sketches the dozen contributed by Mr. Orrock would be likely to hold first place. The subjects are taken from England, Wales and Scotland, and there are some seascapes among them, but all are marked by power and a resolve to put on paper whatever was most characteristic in the scene before the artist. The Eastern sketches of Mr. J. S. Crompton are skilfully drawn. Mr. J. S. Ferrier divides his attention between Brittany and Edinburgh. Mr. W. Lee Hankey represents French influence in the gallery. Mr. T. R. Macquoid's drawings look like etchings or tracings, but they are so minutely finished they cannot be considered by any straining of language as studies or sketches. Mr. H. Swanwick is another member who has drawn inspiration largely from the East, and his pleasing collection is lightly painted. It should also be mentioned that the exhibition is graced by a sketch by H.R.H. Princess Henry of Battenberg, entitled *Evening at Dartmouth*, in which a very difficult subject is represented in a manner that is not amateurish.

CHEMISTRY AND CONSTRUCTION.*

THE chemist cannot claim much indebtedness on the part of the builder. Owing to the necessity of conducting experiments on a small scale and the defects of apparatus, a long period elapsed before any of the materials employed in construction were subjected to analysis. The first man who had the courage to depart from the ordinary course was Richard Watson, Bishop of Llandaff. He was appointed professor of chemistry in Cambridge, although it was generally known that he was without elementary knowledge of the science. But he was a student of great courage and application. After he secured the office he toiled without interruption, and his lectures were successful. He belonged to a family of "statesmen," or yeomanry, in Westmorland, and as he was surrounded by building stones and slates he was not afraid to investigate their properties. His conclusions were published, and it must be allowed that in the course of the century which has elapsed since Watson lived, building chemistry, if we may be allowed the phrase, has not been much extended.

It is easy to understand the reasons for the peculiarity by which the knowledge of building materials seems to stand still, while with other bodies, organic or inorganic, there is progress. In the first place, building materials, such as stone and wood, have to be used extensively. It is therefore impossible that every piece of either used in a small structure could be tested even if we assume that tests are applicable. Although faith in the uniformity of nature is inherent in man, yet all who use her productions are aware that instances of variation are not uncommon. A dozen or more beds in a quarry will yield excellent stone, and then there may be a succession of beds similar in external character which are wanting in endurance. One remarkable instance of the differences in stone of the same formation is known to all Englishmen. Since men began to build there never was so elaborate an inquiry as was undertaken to discover the stone which would be worthiest for use in the Legislative Palace at Westminster. The quarries which were finally selected had acquired a reputation, and not even the rivalry of trade was able to give rise to any misgiving about the wisdom of the choice. We all know the consequences, and yet it could not be said that the chemists on the Commission had omitted any tests which should be employed, or that the geologists and the representatives of construction were without practical knowledge. The Commissioners could not be blamed, for in dealing with material it is impossible to see all the contingencies which may arise and hasten decay. In spite of the knowledge of building materials which has been gained during the last half century, it is by no means certain that a definite theory of the causes of the dissolution of the masonry of the Houses of Parliament could be formulated.

It is not to be expected that with less important buildings a more successful method of inquiry can be adopted, and while the Houses of Parliament remain there must be doubts about the possibility of securing stone that will be perfect. We must take things as nature condescends to supply them, and as it would be presumption to suppose that the only object in view when rocks were created was the erection of buildings, we cannot grumble if we have not at hand stones possessed of all the qualities we desire. Indeed, it is no heresy to say that man can make a stronger and more enduring building stone than any to be found in quarries, and in course of time we may expect the chemist to provide us with granites and marbles which will be not only strong but beautiful. But even then it must be expected that from economy and other reasons natural stone will be employed regardless of its risks.

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* *The Chemistry of the Materials of Engineering.* By A. Humboldt Sexton. The Technical Publishing Company, Manchester. London: John Heywood.

The province of the chemist has of late years been so widened, it is no longer the fact that his experiments cannot go beyond analysis. It is allowable for him to employ mechanical forces to discover the powers of compression, extension and resistance to abrasion possessed by a material to be used in construction. The importance now attached to sanitation also makes it necessary that a chemist should be able to deal with bacteriological problems in relation to soils around and beneath a building. The field for utility has consequently been enlarged, and it may therefore be expected that chemistry will be more of an auxiliary to architecture than in the past. But, on the other hand, care must be taken not to undervalue chemistry by treating its terminology as if it is of little account and can be employed without any special knowledge. There is a passage in Professor Sexton's book which is suggestive of a practice which is not uncommon and brings many risks. When treating of the selection of steel, he says :—

> The engineer frequently specifies steel made by a particular process, and this is often objected to on the ground that, if the engineer gets a material which will pass his tests it is a matter of no moment to him how it is prepared. This is, however, not strictly the case. That the engineer only needs to obtain a suitable material is undoubtedly true, but as every piece of metal cannot be tested he is perfectly justified in deciding not to accept steel made by a process in which there is any likelihood of either the introduction of injurious constituents or the production of steel of irregular composition and qualities. There is, however, unfortunately, no doubt that engineers often specify steel to be made by a particular process from habit or fancy, without any clear idea as to why the metal made by that process should be better than that made by any other. Such specifications have lowered engineers very much in the eyes of practical metallurgists, and have made the latter think that only too often the former do not know exactly what they want. Architects are perhaps even worse sinners in this respect than engineers, it being no uncommon thing for girders and other articles of structural steel to be specified as to be made of "mild steel," without any restriction as to composition or provision for testing.

It is feasible to obtain steel and iron that will approximate to qualities that are desirable. We may not attain as high a degree of strength as we imagine to be possible, and in cast-iron serious defects cannot always be avoided. But the general uniformity of the qualities of steel and iron is remarkable and reveals the superiority of human operations. Iron ore forms a very inferior material if compared with the iron which is employed in construction. What is true of iron applies to most other metals, but when we have to use what nature supplies with little or no modification, as happens with wood or stone, then we have to encounter defects which might easily be supposed to be among the protractive trials employed "to find persistive constancy in men." In the case of wood, strength, or rather endurance, is only obtainable by destroying the organic power which may subsist after a tree has been cut down and divided into pieces. In other words, the character of the material has to be transformed. If the chemist could only find as efficacious a remedy against the dangers to which stone is liable, then builders and architects would be indebted to him. But stone is not so easily changed as timber, and until it is, the services of chemistry to building construction must be as partial as they are at present. The extent of the remedies which are applicable to stone are shortly described by Professor Sexton :—

> A mere surface cover such as paint is of little use, as the disintegrating agents will soon find their way through it—besides which paint destroys the character of a stone building—but the stone must be saturated with the preservative so that its pores are filled up, and air cannot find access. The number of materials that have been suggested is almost innumerable, oil, paraffin and many other similar substances having been used with more or less success. The only substance which seems to have been a success is soluble silicate, such as sodium silicate, either alone or mixed with a salt such as calcium chloride. If sodium silicate alone be used this is slowly decomposed by the carbon-dioxide in the air, silica being liberated. If after the sodium silicate has been used calcium chloride be applied, double decomposition will take place and calcium silicate will be formed. It cannot be said that any of the preservatives are an unqualified success ; indeed, it is difficult to see how they can be, especially when they have to be applied to the stonework of existing buildings which cannot be either quite clean or quite dry, and which it is therefore impossible to saturate thoroughly with the preservative.

Chemistry can be serviceable in all productions which are formed of clay. Ordinary bricks, for example, become deteriorated when there is over much lime in the clay, and the presence of iron pyrites may be indicated by excessive porosity. The empiric knowledge of an experienced brickmaker somehow serves for science, and if bricks are defective it rarely happens through accident. When prices are kept low there is always a danger of having bricks which are ill-shaped and insufficiently baked. In terra-cotta, on the contrary, care is not always rewarded by good work. A slight variation in the temperature of a kiln is sufficient to make a difference in the appearance and mouldings of pieces which have to be set side by side, and it should be remembered that for those unavoidable accidents some provision should be allowed in dealing with estimates.

It is needless to say limes can also be made a subject of chemical investigation. Professor Sexton says, for instance, that "the hydraulic properties of a lime depend not only on the constituents present, but on the temperature at which it is burned ; if too high a temperature be used the hydraulic power is destroyed." It might be supposed that, owing to the increased price of fuel, the defect will not often arise at the present time. Lime now costs in some places nearly double the price at which it was obtainable at the beginning of the year. On that account it is to be expected the proportions of lime and sand in ordinary mortar will not be normal unless care is taken in watching the mixing.

Paints and varnishes are among the subjects connected with building which are described in Professor Sexton's book. One of his remarks is worth mentioning, viz. "For paints exposed to the weather all carbonates should be absent, since they are all (even lead carbonate) dissolved by water containing carbon-dioxide."

The volume we have noticed was prepared as a textbook for students in the author's classes. But it is adapted for a wider use, and can be made to serve for those who have not the leisure for a systematic training in chemistry. Professor Sexton does not exaggerate the importance of his science, and he often suggests where it has failed to realise the expectations of chemists. On that account it will have more influence with practical men, for it does not recommend them to renounce the means, it may be empirical, which enabled the ancient builders to erect structures which have lasted as long as can be expected from materials which have been subjects of scientific inquiry.

ARCHITECTURE AT KING'S COLLEGE.

THE Principal of King's College writes :—A department for the organised teaching of architecture in relation to applied science has for many years existed at this college. Within the last few years the teaching in this department has been developed into a systematic course of training which in thoroughness and efficiency is on a level with the existing schools of engineering in London.

The course is of three years' duration. During those three years the student devotes his whole time to the college curriculum, beginning with mechanical and applied science, and specialising more exclusively in architecture in the latter part of the course.

Owing to the exertions of the late Professor Fletcher, and to the generosity of the Carpenters' Company and other benefactors, the studio is equipped with an excellent collection of architectural casts ; there is a very fine museum, containing specimens of materials, models, diagrams and invaluable drawings in great number. There is also a special library. The department offers special facilities for the study of architecture both as an art and as a branch of science.

Whether the path to a degree in architecture is to be through the B Sc. "in engineering," with architecture as one of the alternative branches of study for that degree, or through a specially created degree in architecture *eo nomine*, is a question involving debateable points of principle which awaits the new Senate. But in either case the work of this college in the department of architecture is a fact to be taken into account. I would add that the reconstructed suite of rooms in which it is carried on is among those to be formally opened by Lord Lister on the 30th inst. Members of the profession or others interested in the subject of this letter who have not yet received an invitation to be present can obtain one if they will kindly apply as soon as possible to the secretary of the college.

THE ANCIENT GREEK THEATRE.

IN opening the Class of Classical Archæology at Edinburgh University Professor Baldwin Brown began by sketching the course of the recent controversy about the arrangement of the ancient Greek theatre and the method of staging the plays of the great dramatists of the fifth century B.C. Since the publication of his book on the theatre of the Greeks, Dr. Dörpfeldt had withdrawn his accusation against Vitruvius that the latter had blundered in his notice of the Greek stage, and had admitted that in a certain class of Greek theatres of the time of Vitruvius performances did take place on the high and shallow platform which he described. This was very far indeed from proving that a high stage, or even that any stage, existed in the time of Æschylus and Sophocles. Recent excavations of Greek theatres, notably the latest of all at Priené, in Asia Minor, seemed to supply additional evidence in favour of Dr. Dörpfeldt's general theory that in the fifth century B.C. there was no stage or permanent stage buildings, but that the actors occupied the same level as the chorus. The relation between the chorus and the actors, who were originally members of the chorus, was in the early Greek dramas far too close to admit of the speakers being perched on a high shelf some 10 to 12 feet above the level of the orchestra, as Mr Haigh in his "Attic Theatre" still seemed to consider possible. It had to be remembered that many of the earlier Greek dramas did not require as background the traditional palace, but a quite different "mise-en-scène," such as the cave of Philoktetes, the rock on which Prometheus was bound, the altar of the "Supplices," the tent and seashore of the "Ajax." It was a very plausible theory that these would be built up on each occasion as required, and that the same would be done for the palace front when, as in the "Oresteia," such a background was needed. He (the lecturer) was not, however, prepared to admit that the actors had no platform or elevation of any kind to speak from, as that would have been contrary to ancient habit It would be quite easy to contrive on each occasion some slightly raised station for the actors, such as the two steps that led up to the porch of the palace hall at Tiryns, the platform of an altar, or the rough ground ascending to a cave or rock, or in the "Ajax," a sand-dune. Such an arrangement would permit of the actors using the orchestra when required, as on the occasion of the triumphal entry of Agamemnon after his return from Troy. The remainder of the lecture was devoted to a discussion of some of the situations in the "Agamemnon" of Æschylus, as illustrated by the recent open-air performances of the play at Bradfield College, Berkshire, where the auditorium of an old Greek theatre had been carved out of an old chalk-pit. Such a performance was a great help towards a realisation of the conditions of the problem on which so much had recently been written.

THE NEW LAMBETH BRIDGE.

THE proposal to apply to some leading authority on Gothic architecture to clothe the piers of the Lambeth Bridge with appropriate detail in harmony with the Houses of Parliament and with the Archbishop's Palace, does not meet the approval of Professor Baldwin Brown. He says :—

I venture to hope that this very naive, but now rather discredited method will not be adopted. If the bridge is to be a good one it will harmonise well enough with its surroundings; and if it is a bad bridge no amount of Gothic detail licked over ugly piers will be of any real artistic value. The bridge will presumably be of steel. It is perfectly possible for a structure in this materal to be artistic, both in general form and also to a great extent in detail, but this can only be the case if the material is frankly used and does not pretend to be something else, or hide itself away behind screens or shams.

The palaces now flanking the Champ de Mars at Paris show some very promising attempts towards a solution of one of the great problems of the building art of our time—the evolution of steel details pleasing in form and characteristic of the substance. Is not this the direction in which bridge builders should look for the artistic effects they rightly wish to secure?

As to stone piers, they need not trouble about special historic styles in details—least of all about Gothic details, which might harmonise with a building a quarter of a mile away, but would be woefully incongruous with the actual structure to which they belong. If the piers are made to do their work, and are seen to do their work, a very little artistic modification of their forms and the emphasising of these by some well-considered tectonic features, would be all that is required.

The idea of the co-operation in undertakings of the kind of the engineer and the architect is at best a lame sort of compromise from which there is little to hope. The art of the structure should be a development from within, and this is in the hands of the man who controls the material and the manner of its use. In these days we are so specialised that some constructors are supposed to be artists, while the rest—engineers and builders—are freed from all artistic responsibilities. In old days all constructors were artists, because they employed their material with sincerity, and then let their own native taste guide them in the placing of suitable detail and enrichment, which, because it came so naturally, was nearly always artistically right. There must be many engineers who could do the same, and the times are ripe for their appearance on the scene. Perhaps some are holding back through reluctance to trespass on the supposed exclusive domain of the "artist."

ST. MARTIN-IN-THE-FIELDS CHURCH.

IN a letter to the *Times* Mr. Thackeray Turner writes :—

In July 1887 you were good enough to insert a letter from my Society protesting against a scheme for altering the steps at the west end of St. Martin's Church, and the scheme was abandoned.

We recently learnt that another scheme is on foot, and the Society immediately wrote to the London County Council urging that no scheme should be agreed to which involved any alteration of the steps other than renewal, as we consider the dignity of this building is largely due to the present arrangement of the steps.

By the courtesy of the officials at St. Martin's Vestry-hall I have to-day been allowed to see the drawings of the proposed scheme, which provide for making one continuous flight of steps up to the portico.

This means omitting a landing which is 5 feet wide on the west side and 10 feet wide on the south side, and which is all important, as it practically carries on the level of the churchyard, which, as will be remembered, is shoulder high above Duncannon Street.

It is well known that a staircase in one flight of, say, twenty steps is not as dignified as a staircase of two flights of ten steps each separated by a landing, nor as safe.

The west front of St. Paul's Cathedral would lose much of its dignity if there were no landings in the flight of steps leading up to it, but in the case of St. Martin's Church the landing proposed to be omitted has an additional value, as it shows to the eye that the church really stands at the level of the churchyard.

I would further urge that the present arrangement of the steps is actually better as it is, inasmuch as there is a lay-by on the north side of the portico where omnibuses can draw up without interfering with the main traffic. It is true that the police would allow them to stop at the corner, but this simply means that they have not grasped the situation.

As I pointed out in my previous letter, if additional width is needed to the street in front of the church, this can be obtained at the expense of the forecourt of the National Gallery, although I cannot think it is needed.

I feel convinced that the majority of Londoners would sooner that the National Gallery should be a little cramped than that St. Martin's Church should be harmed.

I hope, sir, that you will consider that the extraordinary dignity and beauty of the famous church of St. Martin justify this letter.

THE DECORATION OF GLASGOW MUNICIPAL BANQUETING-HALL.

THE first of the series of decorative panels by Scottish artists to adorn the walls of the banqueting-hall in the Glasgow Municipal Buildings has been formally taken over by the Corporation from the artist, Mr. Alexander Roche. So far, arrangements have been made only for the filling-in of the three panels of the south wall, leaving the end spaces for subsequent treatment. In accordance with the scheme suggested by the architect of the buildings, Mr. Leiper, it was agreed, says the *Scotsman*, that the three panels should symbolise Glasgow in the legendary stage, Mediæval Glasgow, and modern Glasgow. Beyond this general indication the artists were left an entirely free hand. Mr. Roche was entrusted with the legendary period of the city's history. As providing an appropriate motive for the panel he fixed upon the following :—"Legend tells how Languoreth, queen of Strathclyde, lost a ring that King Rederech, her lord, had given her for a love token, wherefore he would have had her slain, but she besought the aid of St. Mungo, who bade a fisherman cast his net into the Clyde, whereby a salmon was caught. In its mouth was found the lost ring. Thus Glasgow bears a fish and a ring on her city arms." Naturally the artist had a great deal to do in the way of experimental work before arriving at the final design, and this no doubt would account for the fact that the execution of the panel has occupied nearly eight months. The scale of figures required to be set and colours chosen to suit the grey tones of the Glasgow atmosphere, and at the same time to harmonise with the general decoration of the hall. In a manner Mr. Roche has had to pave the way for Mr. Lavery and Mr. Walton, who follow with the other panels. In every respect the result attained is admirable. A standard is set in the conception of the design, as well in its execution, which is very high indeed. Too much could scarcely be said in praise of the artist's work. The incident depicted is the finding of the ring in the fish's mouth. Two pilasters divide the panel into three. In the centre space, which is much the largest, the king of manly form stands on the river's brink, arms folded across his breast, and with a somewhat sceptical expression on his features, eyeing the ring which St. Mungo, half-stooping, full-bearded and in monastic robe, has just extracted from the mouth of a salmon held up by a naked fisherman waist-deep in the water. On the right of the king is his royal spouse, pointing to the ring with her right hand and appealingly scanning her husband's face. Other interested figures fill in the outer sections of the panel. The figures are of heroic scale, and clothed as befitting the period. The background of the picture is a sunlit valley shut off on the right by rising ground, and on the left by a gloomy hill half hidden in the foliage of intervening trees. A bird perched on a somewhat conventional tree behind the principal group and a bell on the neck of an ox ploughing on the right of the picture complete a suggestion of the Glasgow coat-of-arms. The design is at once simple and dignified, yet highly striking, and the grouping is excellent. To correspond with the full scheme of the hall the colouring of the panel is of a Venetian richness, and the effect is most pleasing. The blue of the arched roof finds its harmonic equivalent in the deep azure of the sky in the picture, while the rich hues of the carpetted floor have a responsive note in the varied draperies of the female figures. As in this moist climate actual fresco-work is not a satisfactory mode of decoration, the panel has been painted on prepared canvas similar to that used by Chavannes and Sargent in the Boston Library, and is practically imperishable. As the artist's studio was not large enough for the great expanse of canvas necessary for the panel, the most of the work was done in a room granted for the purpose in the National Portrait Gallery, Edinburgh. It only remains to be added that at the taking-over ceremony by the members of the Town Council the references to the picture were highly complimentary to the artist.

GLASGOW INSTITUTE OF ARCHITECTS.

THE annual general meeting of this Institute was held on the 16th inst. in the rooms, 187 Pitt Street, Mr. David Barclay, F.R.I.B.A., president, in the chair. Mr. C. J. MacLean, secretary, read the annual report, from which it appeared that during the past session there was added to the roll of honorary members the Very Rev. Principal Story, D.D., LL.D., from whom an acknowledgment was duly received, expressing his deep appreciation of the honour thus conferred upon him by the Institute. Honorary membership was also conferred upon Messrs. John Burnet, F.R.I.B.A., and John Honeyman, R.S.A., F.R.I.B.A., whose names are accordingly transferred from the list of ordinary members. The number now on the roll, exclusive of honorary members, is sixty-nine, leaving few architects in the West of Scotland, of the necessary standing and qualifications, who have not become members. The rooms at 187 Pitt Street continue to be jointly occupied by the Institute and the Architectural Association, a new lease having been entered into with the proprietors. These rooms have been of great benefit, especially to the younger members of the profession, who are enabled to meet each other for mutual improvement, and have other advantages not formerly enjoyed by them.

The following were the winners of the Institute prizes this year :—School of Art—First prize, Mr. Arthur D. Nicholson ; second prize, Mr. David Thomson. Technical College—Mr. Alex. F. Heathcote.

The Council agreed to renew this year the prizes of five guineas to the School of Art and two guineas to the Technical College. It was further resolved that both these prizes should be paid out of the funds of the Institute, the feeling being that in this manner each member would share in the contribution, while if individually subscribed, as on some previous occasions, the whole cost might fall on a few. The Alexander Thomson memorial studentship of 60*l*. was this year awarded to Mr. L. Rome Guthrie. All the seven sets of drawings submitted were exhibited in the School of Art, by the kind permission of the headmaster, along with a critique of the drawings, written by Mr. A. N. Paterson. Mr. Guthrie, after travelling in Spain, reached Rome in April, and a letter has been received from him giving an account of his tour, during part of which he was accompanied by two Owen Jones travelling students. With regard to the Woodside District Halls competition, it was resolved to record an expression of disappointment and regret at the delay which has taken place in this matter, and the opinion of the Institute that the assessors should at once present their report without waiting for information which had been withheld by the Corporation.

In the official list of awards in the fine art section of the Paris Exhibition the Council were pleased to observe the names of Messrs. William Leiper, R.S.A., and J. J. Burnet, A.R.S.A., as having each received a silver medal. The Royal Institute having agreed to the proposal made by this Institute that their 1901 dinner should be held in Glasgow during the time the exhibition is open, a committee has been appointed to make arrangements for the reception of the Royal Institute during the exhibition. The date proposed is early in October, but the committee are at present in communication with the Corporation on the subject. The Institute arranged, in co-operation with the fine arts committee of the Glasgow International Exhibition, 1901, to exhibit there a collection of photographs illustrative of the architecture of Glasgow, from the earliest times till the present day. The photographs, to the number of about 150, will be provided by the Institute, and will revert to it after the close of the exhibition, to form a permanent feature of its library collection, which will, it is hoped, be enriched from year to year by contributions of photographs of current representative works by members and others. While the Institute has voted from its capital fund sufficient to proceed meantime with the collection, where the work is by architects unknown or long deceased, it has, in connection with work of more recent date invited, and in most cases obtained, the co-operation of many firms still in existence in procuring photographs of works by retired or deceased architects still represented by them. The committee has also been instructed to co-operate as far as possible with the exhibition fine art committee towards securing, in the contributions of local architects to the section of modern architecture, some continuity with the retrospective collection.

The Council for the ensuing year was elected as follows:—Messrs. Alex. Petrie, John Jas. Burnet, Jas. A. Morris, David Barclay, W. Forrest Salmon, A. N. Paterson, John Keppie, H. K. Bromhead, James Lindsay, Miles S. Gibson, N. Macwhannell, D. M'Naughtan, Campbell Douglas, T. L. Watson, T. Baird, jun., J. M. Monro and Alex. M'Gibbon. Mr. A. M'Gibbon was elected a representative on the joint house committee. The treasurer's accounts were submitted to the meeting, and showed that the funds were in a satisfactory position. A vote of thanks to the chairman terminated the proceedings.

ENGLISH CHURCH ARCHITECTURE.

A LECTURE in connection with the Oxford Extension was delivered by the Rev. Walter Marshall, M.A. The lecturer referred to the parish church of Horsham. Restoration had torn away much which marked out periods, and it does not do to be too cocksure in architecture. Parish churches were laid out in their thousands, but he had not brought very many views of those belonging to the pre-Norman period. Studying books can help only. English architecture is one thing from first to last. Study the great stone book. The facts we discover for ourselves are always the most valuable. Architecture includes all that goes to make a building complete, and it is only in later times that a harmonious whole has ceased to exist. In dividing into periods we must avoid a great danger by remembering that these periods did not begin in any one year. Art was always advancing, progression always going on. Speaking of the two styles, Romanesque and Gothic, he said the first was developed by the northern nations from Rome. The round arch was one of its characteristics. It was succeeded by the Gothic, a term first bestowed in contempt. The pointed arch was a mark of the Gothic style. No doubt the pre-Norman buildings in England were imposing, but they were gone. The havoc of the Danish invasion and the coming of the Normans had swept them away. There were indications lurking in some of our English village churches which help us to realise this earliest style. Another and better clue to it was to be found in Ireland. Ireland was Christianised from Britain ; but in studying these early Irish churches we must remember that that country was in a less advanced stage of civilisation than England at the time of their building. The probability was therefore that contemporary British buildings were not equally rude with the remains which had survived in Ireland. As there was an absence of mortar in these early churches, the tendency was for the walls to converge to a point. The sides of doors and windows inclined ; roofs were of stone ; the buildings faced the east, and were built in a double parallelogram. The altar had a stone seat behind it, so that the priest faced the people, and invariably the east end of the building was square. These seven points should be borne in mind. Rome knew nothing of the square end, and invariably used the apse. The churches built by Roman colonists in Britain were apsidal, had a sanctuary divided by an arch, and an eastern termination. The second period in English church architecture might be placed about the close of the sixth century after the arrival of St. Augustine. To judge of what was then built in England we must go to the contemporary style of Italy at that date. But Augustine and his followers were missionaries, not architects. What is technically known as "long and short work" in the masonry of old buildings was explained from views of a chancel arch. It consisted of one short oblong stone laid parallel with the foundation, upon which a long stone of the same shape rested perpendicularly at one end, so that a flat face was formed on the one side, the uneven one serving as ties into the wall, the order of long and short being continued throughout to the height required. Saxon quoins or angles were also shown and explained. The probable use of large stones, to form the side of arches and angles, was previous to the introduction of this long and short work. The wattle hut, block house and framed timber work led up to the construction of wooden churches. An excellent photograph of a Saxon wooden church still remaining at Greenstead, in Essex, was shown. The walls of the nave of this church are formed of upright timber, split down the middle and with the bark peeled off, the flat side forming the inside of the walls and the rounded the outer. As the mode of wall building proved draughty strips of wood had in later times been placed over the cracks on the inside. In "stone carpentry" of early date we got triangularly-headed doorways. The use of baluster shafts was a curious custom which lasted more or less for 400 years, the same idea reappearing in the Renaissance, where, chiefly in Northamptonshire, it might be found in the form of double or treble windows in belfries. As time advanced a point for note was the great height at which the windows were placed in the churches. This was for purposes of defence, and originally these windows were unglazed. When the Romans came it was not to be wondered at that their influence upon English church architecture should prove great. The Saxons had no genuine style of their own. With the coming of the Romans we got the apse, confessorary-crypt and wide chancel arch, as shown in view of a winged church. Here the floor of the eastern end was raised for the crypt, which was underneath. In the crypt were kept the relics of a confessor or saint—hence the name confessorary-crypt—and originally there was an opening in the centre of the steps leading into the chancel, through which these could be seen by those in the church without descent into the crypt itself. For Saxon architecture we had these points:—The square east end, transepts lower than the nave, a central tower, single tower to the west and narrow chancel arch, with altars on each side of it. The narrow arch was not unknown in Ireland. With reference to chancel screens it should be noted the purpose of these was the fencing in of the place where the mysteries are celebrated, and that this was entirely opposed to the British style, where all was open. "Long and short" stone-work pointed to a late date, and the cruciform plan was important in dating buildings so built. The Romans used the cruciform plan in their tombs, and we found it in the catacombs In church construction this plan was not found earlier than the tenth century. With regard to village churches we found the tower west of the nave, the main entrance to the south-west, high chancel screens, transepts lower than the nave and the square east end. These were buildings which we inherited from pre-Conquest times.

GLAZING PAINTINGS.

In a letter to the *Manchester Guardian* Mr. Frederic Shields says:—I have forborne further argument until the absorption of the country and your own share in the great issues of the election-time were past, and also because enough had been said both on Mr. Dyall's part and my own on the original question raised. That I again presume to address you is because a far wider question has sprung out of the first, concerning the preservation of the Town Hall frescoes, which, being of national importance, may well go on to seek voice in your journal, which has a national repute and circulation. In his last letter Mr. Dyall persists in pressing that the Madox Brown paintings should be covered with glass. So, can I imagine, stood the whitewashers of our ancient churches in the last century, when every fresco within reach of their fell brush had been obliterated, glaring greedily around for fresh areas of mischief. It is nothing to Mr. Dyall that he has been assured that his prescription has been tried and confessed a failure by all who witnessed the experiment, nor that, on the highest chemical authority, the Gambier Parry process is more permanent than oil (and numerous are the examples of fine oil-paintings which showed no deterioration after three and four hundred years' existence). He cannot rebut my main argument that the primal purpose of a picture's production is that it shall be seen—seen as a whole, undistorted and unbroken by any interposed reflecting medium. This is the chief requirement in exhibiting pictures. The very term "exhibit" confirms this.

In Rossetti's case it is the more to be deplored since the depths of tone he triumphed in make his works especially receptive of reflections under glass; for, let me reinsist, the deeper the tones and the larger the area of a picture, the more does it catch reflections if glazed. I have lately viewed the large paintings by Lord Leighton and others adorning the open cloisters of the Royal Exchange, which are exposed to the smoke-tainted air of London city and all the variations of the seasons. Most, if not all, of these are painted in the same method as those in the Manchester Town Hall, and are all characterised by the dull, fresco-like surface befitting wall decoration. Over these also Mr. Dyall would doubtless stretch his sheltering crystal wing. From the Royal Exchange I went straight to the National Gallery. What a contrast—there nothing to vex the vision. But at the nation's gallery I found, to my horror, that almost the whole collection has recently been covered with glass, even the enormous canvas by Veronese of "Alexander and the Family of Darius." As I cast my gaze about, all high and low was shimmering glass. A swimming vertigo, a dazed confusion overcame me as I vainly struggled to disentangle my eyes from the glittering web of reflections that encompassed me. Then I tried a single picture at one end, but the whole length of the gallery was clearly reflected in it. Sore depressed I wandered on, to be brought sharp up in the middle of the Spanish gallery by a huge screen of black cloth erected to intercept the bewildering reflections of the opposite wall from Murillo's "Holy Family," which a student was copying. Every genuine student at the National Gallery feels this change cruelly. Said one, "I now have to take every occasional chance when the glass is removed from any picture of studying it." And another, "I am never free from the image of my own contemptible figure, and I feel inclined to go dressed in black and with my face blacked to minimise this mirror evil."

So, foiled in all attempts to study, whether from a near or distant point, and sore depressed, I mournfully left the haunt that had been my nursery in boyhood and my joy and profit in maturer life, in burning revolt against this mistaken policy of the nation's trustees. A precious manuscript may be secluded and none suffer, for the printing press can circulate its matter. But a great painter's work cannot be reproduced. Not even he skilfullest brush of the most penetrative copyist can follow the activity of thought and execution which illuminate the touches of a great painter. In the original alone can he be understood. And thus the issue raised by Mr. Dyall's letter becomes widened to one of the most vital import to the future of England's art. The National Gallery and, in a subordinate sense, all public galleries are not for the entertainment of the general public only, but are also for the education of the many aspirants after excellence who seek therein for the highest standards of guidance. The biographies of great English painters teem with references to the nourishment they have sucked from their works of the mighty of old. One extract must here suffice:—"Studied a Bassano till I smelt its colour. Oh! what they lose who do not glory in the old painters! What an eye; what a nerve for colour. How I sucked it in; how I tasted it on the tip of my tongue, and how delicious the surface, how deep the tone." The great works of the past are seed corn, fruitful of emulation in the present and future. It is the deadliest error upon the part of trustees and keepers to hold them as merely a collection of precious but ungerminative jewels. It is as if an insane ship's captain should look upon the ship's food chiefly as cargo to conserve, and thereby starve his crew. The hindrance to study, interposed by plate glass, will tend to sink the already decadent art of oil-painting lower and lower, and so indisputable is its hindrance that Mr. Dyall unwittingly yields to the force of my contention in saying, "It simply needs that the spectator should move to the right or left." There is no escape. The reflections are as the Balaclava cannon; they volley and thunder to right and to left. And he confesses that something foreign to the pictures has to be dodged or evaded when he says, "Let the spectator look at the picture and nothing else." A difficult task indeed when a good picture is transformed into a bad mirror. And I am highly diverted by Mr. Dyall's professional tone, where "he would strongly advise all lovers of pictures"—and truly I am one—"to study the art of seeing." A strenuous exercise indeed under the sight-perplexing conditions he upholds. In the event of fire the ponderous weight of plate glass would prove fatal to the rescue of any but very moderate-sized pictures. *Punch* hit the nail on the head in a dialogue between two ladies in a picture gallery, where one exclaims, "What a blessing they have put glass to this picture."

The Members of the Institution of Junior Engineers will, on Saturday, November 3, at 3 P.M., visit the Millbank Street station of the London Hydraulic Power Company, Westminster.

NOTES AND COMMENTS.

Some of the lectures of the late William Morris are in the course of publication by Messrs. Longmans & Co. As they are printed in the "golden type" which he designed for the costly books that he printed, it is not unlikely the lectures will be treasured as typographical curiosities, and will not be read. One of the lectures we have received deals with "Architecture and History," and as it was read before the Society for the Preservation of Ancient Buildings in 1884, its character can be easily inferred. William Morris was one of those men who could not help believing that the past was preferable to the present, and that he, as a poet, was born too late. But in this lecture he accepts the principle of evolution, and turns it to excellent account in order to prove that old masonry should be left alone, because "the untouched surface of ancient architecture bears witness to the development of man's ideas, to the continuity of history, and so doing affords never-ceasing instruction, nay education, to the passing generations, not only telling us what were the aspirations of men passed away, but also what we may hope for in the time to come." A second lecture deals with Westminster Abbey, and the tampering with the building during many generations justifies all he says about the dangers of restoration. His conclusion was that the sole charge of the Abbey was too great for one architect, and he would have a committee of practical architects, builders and engineers to report on the stability of the fabric and on the means to be adopted for its security. Both lectures are marked by the author's earnestness in whatever related to antiquity.

The influence of fashion in determining the value of pictures is now being exemplified in the case of Botticelli's *Madonna*, which has disappeared from the Chigi Palace in Rome. Not many years ago it was not noticed in guide books, although commonplace works by inferior painters were described. Now it is said that the large sum of 12,600*l.* has been paid for the picture, and the Italian Government have obtained a condemnation against the former owner with a fine amounting to 12,600*l.* for disregarding the law prohibiting the sale of masterpieces to foreigners. In all such cases the difficulty is to determine whether a work of art is an heirloom or altogether the property of the owner for the time being. In the former case the old Papal edict associated with the name of Cardinal Pacca comes into operation, but in the latter the regulations are less stringent. It is also said that in cases where the vendor is of high rank the State can be conciliated by the presentation of works of art to the national gallery of Rome. Prince Sciarra, who was pursued in the law courts and who was fined in large sums for selling Raphael's *Violin Player* and other works, escaped all his liabilities by offering fifteen pictures to the Roman gallery. Prince Chigi will no doubt be able to settle the litigation on similar terms.

The splendid vases which were found at Bosco Reale, and were purchased by Baron de Rothschild for presentation to the Louvre, have incited explorers to undertake excavations in the hope of finding similar treasures. This time examples of art of a more important class have been discovered. Remains of an ancient edifice of older date than the neighbouring Pompeian buildings have been brought to light. Ruins are common enough in Italy, but what gives value to the old walls is that they are adorned with frescoes, and of that kind of painting few examples have survived. The Emperor of Germany, it is said, no sooner heard of the discovery than, with his customary energy and enterprise, he sought to obtain possession of the paintings—there are not less than seventy—by offering a liberal price for them. The aid of the King of Italy has also been invoked to facilitate the arrangements. The Italian archæologists are not satisfied with the proposal to remove such valuable evidence of the state of painting in Italy to a foreign country. Some of the figures are of life-size. If, however, the frescoes cannot be retained in Italy, there is no country in Europe which stands in more need of examples of Græco-Roman painting than England, and we should be able to pay a higher price than the Germans.

The demand for Guernsey granite is yearly increasing, and as the supply is inexhaustible it may be assumed the qualities of the material will soon make the island one of the most important centres of the stone trade. In order to be able to meet the new and vast requirements we understand that the old-established firm of William Griffiths & Co. has been recently registered as a limited liability company, and will shortly be placed before the public. The addresses of the company are Hamilton House, Bishopsgate Street Without, E.C., and Guernsey.

ILLUSTRATIONS.

THE FINE ARTS.

In the eighteenth century the influence of Italy on the arts throughout Europe had not ceased, and it must have been with satisfaction to English amateurs and artists that John Baptist Cipriani was elected as one of the original members of our Royal Academy, and that his altar-piece, *The Annunciation*, was seen at the opening exhibition in Pall Mall. He was born in Florence in 1727, but strange to say, his first teacher in art was not an Italian, but an Englishman named Heckford, who lived in Florence. Afterwards he received instruction from Gabbiani, but according to Lanzi he was not under his immediate direction, but was able from a collection of drawings by Gabbiani to form a style resembling that artist's. He came to England and married an English lady; we may therefore presume that the amorini who figure so often in the numerous prints designed by him were his own children. He does not appear to have cared much for painting in oils, but there was no draughtsman in London who could compete with him in invention or elegance. He designed the diploma of the Royal Academy, and was rewarded by the presentation of a silver cup. He died in 1785. He was exactly the kind of man who was most competent to co-operate with Bartolozzi, and an immense number of plates were produced by them. In fact, to most people Bartolozzi's style is believed to be founded on Cipriani's, for it is not generally known that as examples of engraving the plates produced by him before he was associated with the painter are of higher value. On that account some hesitate to believe that the large engravings of *King John signing Magna Charta*, after Mortimer, and the *Death of Lord Chatham*, after Copley, came from Bartolozzi's hand.

WHITE HART HOTEL, CAVERSHAM.

The existing hotel, known to most boating people as Bona's Caversham Bridge Hotel, near Reading-on-Thames, will shortly be demolished and the business transferred to the new and adjacent hotel, the subject of our illustration, which is now approaching completion and will be opened in the spring of 1901. It is proposed to transfer the existing way—as shown by footbridge—from the high road to the river to the rear of the new building, where a road 50 feet wide is in contemplation, leading to a river promenade some two miles in length, which has been recently acquired by the Reading Corporation. When the new road is made the hotel will have an uninterrupted river frontage to the Thames.

The hotel is conveniently planned for all classes. The dining-room is 60 feet by 30 feet. Billiard-room and large hall are on the ground-floor. Private sitting and bedrooms are provided on the first floor, and a large number of bedrooms on the third floor. All the ground-floor rooms are far above the highest known flood-level, the basement being used for cellarage and other purposes.

The materials are dark red brick facings for the ground-floor, with ornamental tile hanging, half timber and rough-cast for the upper floor and dark red tiles for the roof.

The whole of the work has been carried out from the designs and under the superintendence of Mr. G. W. Webb, F.R.I.B.A., Reading. The contractors are Messrs. Collier & Catley, of Reading. The heating and cooking arrangements by Messrs. Benham & Son, of London.

DESIGN FOR THE NEW WALSALL MUNICIPAL BUILDINGS: PLANS AND ELEVATIONS.

GEOFFREY CHAUCER AS CLERK OF THE KING'S WORKS.

It is believed the death of Chaucer occurred in the year 1400, and the authorities of the British Museum have commemorated the event by arranging editions of the poet's works and other documents relating to him in several glass cases for public inspection. Chaucer, although he is remembered as a poet, did not confine himself to literature. He was a lawyer, a soldier who fought under Edward III. in France, an ambassador, a comptroller of customs, a knight of the shire, &c. Like so many other famous Englishmen in Mediæval times, he was also connected with building, and for a short time held the office of clerk of works for the royal buildings. The late E. W. Godwin wrote an interesting essay on Chaucer as a building official in an early volume of *The Architect*; we now reprint it as it may be more opportune in 1900 than in 1870.

"Michaelmas, 13th Richard II., 7th October. To Geoffrey Chaucer, clerk of the works of the Lord the King within the Palace of Westminster, Tower of London, and divers others the King's castles and manors. In money paid to him by assignment made this day—to wit, by the hands of John Hermesthorp, clerk of the works near the Tower. By writ of liberate amongst the mandates of Easter Term last past—66*l.* 13*s.* 4*d.*"

This is one of many entries of payments to Chaucer as the clerk of the works to Richard II. contained in the Issue Roll of Thomas de Brantingham. It was in 1389 that Chaucer, being then about sixty years old, was appointed to the office above mentioned. "The works" included the palaces, or manors, of Byfleet, Childern Langley, Clarendon, Eltham, Feckenham, Kennington, Sheen, the lodges in the New Forest and royal parks, and the Falcon Mews at Charing Cross. In the following year the Castle of Windsor was added to this list of works, for on July 12, 1390, Chaucer received a commission to execute certain repairs at St. George's Chapel. Under this office he received two shillings a day, a salary nearly equal to that of a judge of one of the superior courts; and yet, in 1391, he resigned, or was dismissed from, this important and lucrative post. Out of this fragment of history three questions present themselves for solution. 1. What was the nature of the office of clerk of the king's works? 2. What were Chaucer's qualifications for such an office? 3. What was the cause of his retirement?

During the whole of Chaucer's long life, and beyond its limits—from four years before his birth till four years after his death—there lived a man whose influential example in the art of architecture was to dominate hardly less powerfully than his contemporary's influence on the sister art of literature. As surveyor to Edward III., William of Wykeham rose to within arm's length of the highest pinnacle of power. Under his direction were built the castles of Windsor and Queenborough, and many other civil and military structures. Then, having experienced the delights of office as Warden of the Southern Forests, Keeper of the Privy Seal, President of the Council and Bishop of Winchester, he reached the highest point of all his glory, when he was as yet only forty-three years old, by being raised to the Chancellorship Now a surveyor in the time of Edward III. was nominally identical with a clerk of the works or architect. It matters little by what name the designer and director of a building be called, his duties remain the same, viz. to design, and then to see that his design is faithfully executed. Within the meaning of these last two words may be involved financial questions, for the Mediæval clerk of works or architect had not uncommonly to act as a clerk of building accounts. For although covenants or contracts were made to execute certain specified work for a given sum of money, the clerk of works under Edward III. was no more exempt from the troubles of builders' accounts than is the architect under Victoria. William of Wykeham's predecessor at Windsor was Adam of Hertingdon, and his accounts show somewhat of the practical business difficulties of such an office, and how utterly impossible it was for any one to manage the duties without the help of assistants or deputies; for every pound of white lead and every fraction of men's time was religiously entered, precisely as is done in these days by a clerk of works on any large estate. All this might easily have been done by a purely local surveyor who had no other work to attend to beyond one particular palace or castle. Such, however, was not the kind of office which Wykeham or Chaucer filled. To understand their position it is necessary to distinguish between *a* clerk of works and *the* clerk of works. Every important building has even in these days a clerk of works, but the office of the Clerk of the King's Works no longer exists. The nearest approach to it, practically, is the chief surveyor in the department of the Board of Works, although perhaps it would be more correct if I said that Mr. Ayrton was the present holder of the office. There can be no doubt that in the Middle Ages the position was one of considerable importance. The officer who held it was in direct communication with the high officers of State, and even with the king himself; not only had he a large staff of assistants, but he was sometimes allowed to execute his own special duties by deputy. From this it is clear enough that the first real duty of an architect—viz. to design the works he is commissioned to execute with his own hand—was no more imperative on an Edwardian clerk of works than it is now on a modern architect; and again, although it was clearly the duty for the clerk to order the work and to have charge of the expenditure, yet this, too, might be shirked. Whatever the theory, the clerk was undoubtedly in practice the mouthpiece of the king, acting between the Crown on the one hand and the real but unknown artist on the other. The latter might have been a Norman William or an English William—a mason skilled in his craft,* or an artist like Wilars, with his parchment of plans and details of life studies and scientific diagrams. That the king's clerks of works would discuss with such men, and suggest many things to them, is very probable, whilst a man of Wykeham's stamp, full of accomplishments, and with that indefinable something which proclaims authority and commands obedience, would have a powerful influence on the men in his office, and however little he might do of the actual work, would be sure to have his name interwoven with the successful designs. Theoretically the clerk, like the modern architect, was an artist, drawing out his own design, directing and superintending its construction, and governing its expenditure. Practically the clerk, very like many of his nineteenth-century brethren, did not draw out the design nor direct its construction. These he left to assistants and deputies, whilst he sought out the company of likely patrons and pottered about the footsteps of a throne.

That many of Chaucer's qualifications for the office of king's architect were as high as those of his predecessor, Wykeham, few nowadays will question. As a scholar he stood high in the estimation of his contemporaries. He is set before us as both graceful and majestic in mien, with a thoughtful, abstracted expression of face, every inch a gentleman. As a diplomatist his visits to Genoa, Florence, Flanders, Paris and Lombardy earned him a reputation with three successive kings; a popular man with his party, he was returned to the Parliament of 1386 as member for Kent. The intimate friend and kinsman of one who was the father of a line of kings, old John of Gaunt, time-honoured Lancaster, he became associated with the most refined and most educated spirits of his time. Socially he was all that could have been desired. But he was a Lollard amongst Lollards, and it is here we see his first disqualification. To succeed in a profession then, as now, it was eminently necessary that a man should conform to the accepted doctrines and the current religion of his day. Of his architectural capabilities we know nothing, excepting so much as we can gather from his own words. From these, however, we learn that he delighted in all the various forms of art and in the comprehensiveness of it. As would be natural in a poet, a love of the picturesque occupied as prominent a place in Chaucer's mind as mathematical severity did in that of his predecessor; for if we may judge from the works executed under the name of Wykeham, there must have been a certain hardness of regularity in the several features and in the outline, a severity that must have looked almost grim amidst the varied sky-lines and wealth of imagination of the old works with which they were associated. In the works attributed to Wykeham we see little or no provision for the exhibition of the sister arts of painting and sculpture. In Chaucer we have a glowing architecture, full of colour and imagery. In every chamber we find the walls painted—

Full of stories old and divers.

The architecture of the earlier poems is chiefly in relation to enclosure walls; thus the garden in the Romaunt de la Rose was—

Full long and broad, and everidele
Enclosed was, and walled wele,
With hie walls enbatailed,
Portrayed without, and well entayled
With many riche portraitures.

Then follow detailed descriptions of the nine "images" of Hate, Felony, Villainy, Covetise, Avarice, Envy, Sorow, Elde, and Povert that—

With gold and azure over all,
Depainted were upon the wall.

Some years later we are introduced to another garden—

Where wal and yate was al of glasse,
And so was closed rounde about
That levelesse none come in ne out,
Uncouthe and straunge to behold;
For every yate, of fine gold

---

* It must be borne in mind that these chief masons were people of no little consequence. The master of the work was allowed a fee over and above his daily wages, a dress, shoes, and a quasi page. And in the time of which I am writing, it is recorded that one of these masons refused to receive his dress, because it had been delayed in its delivery.

A thousand fanes, ay turning,
Entuned had, and briddes singing,
Diverse, and on eche fane a paire,
With open mouth again thaire.
And of a sute were alle the toures,
Subtily corven after floures
Of uncouth colours during ay,
That never bene none sene in May,
With many a smale turret heygh.

Here in the crystal walls, the multitude of tourelles and the thousand gold vanes that in their action set two thousand "briddes" singing, one recognises the exuberance of Chaucer's fancy—an exuberance, however, which we must be careful not to over-rate, for much of what appears to us visionary in his architectural descriptions was but the poetical rendering of the art in the midst of which he lived. Having an aristocratical connection not limited to England, personally acquainted with many of the chief towns of Europe, and ever poring, as he tells us more than once, over books, or, as we should call them, illuminated MSS., he must have seen in towns and pictures, and many a quaint device amongst his friends' collections, creations of art of which we, looking through five centuries of time, see only but the ruin of their ruins.

His earliest description of buildings must have been written just when the new style was beginning to assert itself, and the "subtell compassings" of the first half of the fourteenth century were getting *outré* in fashionable eyes. The Castle of Jealousy was surrounded by "a ditch deepe."

Right wonder large, and also brode,
Upon the which also stode,
Of squared stone a sturdy wall,
Which on a cragge was founded all,
And right great thicknesse eke it bare,
About it was founded square
An hundred fadome on every side,
It was all liche long and wide,
Least any time it were assailed,
Full well about it was battailed,
And round environ eke were set
Full many a rich and faire tournet,
At every corner of this wall
Was set a tour full principall,

* * * * *

And eke amidde this purprise
Was made a tour of great maistrise,
A fairer saw no man with sight,
Large and wide, and of great might,
They dradde none assant,
Of ginne, gonne, nor skaffant,
The temprure of the mortere
Was made of liquor wonder dere,
Of quicke lime persaunt and egre,
The which was tempred with vinegre.
The stone was hard of adamaunt,
Whereof they made the foundemaunt,
The toure was round made in compas,
In all this world no richer was.

At the Court of Love there is a royal castle with

—— toures high and strong,
And high pinacles, large of hight and long.

But it was for the "Castle of Fame" that Chaucer reserved his great strength. To describe it aright he even invoked the aid of Apollo—

God of science and of light.

Its beauty was too great for anyone to picture, neither could such another be made by cast nor compass.

So that the great beautie,
The caste, crafte, and curiositie,
Ne can I not to you devise,
My witte ne may me not suffise;
But nathelesse all the substaunce
I have yet in my remembraunce,
For why? me thought, by Saint Gile,
All was of stone of berile,
Both the castell and the toure,
And eke the hall, and every boure,
Without peeces or joynings,
But many subtell compassings,
As babeuries and pinnacles,
Imageries and tabernacles,
I saw, and full eke of windowes
As flakes fallen in great snowes:
And eke in each of the pinnacles
Weren sundry habitacles,
In which stooden, all withouten,
Full the castle all abouten,
Of all manner of minstrales
And jestoures, that tellen tales.

The poet roamed about the building, musing on its wonderful beauty until he found the castle gate—

Which so well corven was,
That never such another was,
And yet it was by aventure
Y wrought by great and subtill cure;
It needeth not you more to tellen
To make you too long dwellen
Of these yates florishings,
Ne of Compaces, ne of Karvings,
Ne how the hacking in masonries,
As corbettes and imageries.

In the hall, whose walls, roof and floor were covered with gold, were a huge number of statues of worthies placed on pillars of metal, amongst whom we find Virgil

—— on a pillere
That was of tinned iron clere.

Here the compassings, the habitacles of the pinnacles, the corbettes, and the exquisite line—

As flakes fallen in great snowes,

indicate the better forms of art which obtained in Chaucer's youth, rather than those new forms—that compo of straight lines and right lines—that were the fashion at the time he wrote.

In his portraiture of temples the richness of Chaucer's imagination is particularly noteworthy. In or about the year 1369 he wrote that dream of his, called the "House of Fame." There are two buildings in it elaborately described—the Castle, Palace or House of Fame, midway between Earth and Heaven, and the more mundane Temple of Venus. His description of the first has been already cited; the temple is chiefly noteworthy for the story "graven" on its walls. The building itself was

—— ymade of glass,
In which there were mo images
Of gold, standing in sundry stages,
In mo rich tabernacles,
And with perrie mo pinacles
And mo curious portraitures,
And queint manner of figures
Of gold-work than I saw ever.

On a band of brass round the inside of the temple ran the legend "Arma virumque cano," &c., and then began the story of Æneas from the destruction of Troy to his fight with Turnus, and the time when he had "acheved all his aventure." This decoration throughout is spoken of as "graven" and "painted on the wall" in bands or stages, and we have our choice between panels or spaces of graven figures in gold, alternating with panels of paintings, or the whole of the figure part of the subjects graven in gold and set against a painted scenic background, which is not only better decoration, but far more likely to have been the kind of thing Chaucer had in his mind's eye. The Temples of Venus, Mars and Diana, standing on the walls of the Theatre of Theseus like towers on the enceinte of a Mediæval castle, are also described, more for the sake of the "portraitures" that were upon the walls than for any peculiarity of construction, beauty of form or grace of proportion. Of the theatre itself, we are told that the circuit of it measured a mile round about—

Walled of stoon, and dyched al withoute.
Round was the schap, in maner of compaas,
Ful of degre the height of sixty paas,
That whan a man was set in o degre,
He letted nought his felaw for to se.*

A practical and sensible arrangement that might have been imitated with advantage in these latter days. Eastward and westward were gateways of white marble. Upon the first stood the temple or oratory of Venus, on the other that of Mars—

And northward, in a toret on the walle
Of alabastre whit and reed coralle
An oratorie riche for to see,
In worschip of Dyane, goddes of chastite.

For the execution of these works there was in all the land—

No craftys man
That geometry or arsmetrike can,
Ne portreyour, ne kerver of ymages,
That Theseus ne gaf him mete and wages
The theatre for to maken and devyse.

In the three temples the walls appear to have been covered with paintings, both "in length and brede," but it is noteworthy that neither here nor in any other interior that Chaucer describes is there a word said about the roof, vault, or ceiling. The earliest and purest forms of Pointed architecture, although providing such scope for the painter, were no more to Chaucer's luxurious taste than were the long unbroken lines and cold severity of Wykeham's buildings. Subject-work had disappeared from floor, too, as well as from roof, and in the fourteenth century window space and wall space formed the only field for the genius of the "portreyour." Thus it is that Chaucer, borrowing only from contemporary works, tells us nothing of those storied tiles, or marble dallage or roof medallion of older times, of which the few that Time has left us we so highly prize. Where the walls are not painted, we are sure to find the windows of Chaucer's buildings filled with storied glass, and where there are no windows the walls, and the walls only, are covered with decoration. In the "Booke of the Dutchesse" we find both, for his own chamber was—

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* Written subsequently to 1386.

> Ful wel depeynted, and with glas
> Were alle the wyndowes well yglasyd
> Ful clere, and nat a hoole ycrased,
> That to beholde hyt was grete joye,
> For holy al the story of Troye
> Was in the glasynge ywrought
>
> * * * * *
>
> And alle the wallys with colouris fyne
> Were peynte, bothe text and glose,
> And al the romaunce of the rose.

There are many other short fragments scattered up and down throughout Chaucer's works illustrating the joyous coloured architecture in which he seems to have had such delight; but the fragment I shall now quote has more in it than mere delight—it shows us what Chaucer thought of the power or spirit of design :—

> For every wight that hath an hows to found,
> He rennith not the werke to bygynne
> With rakyl hond, but he wole bide a stound,
> *And send his hertis lyne out fro withynne,*
> Altherferst his purpos for to wynne.

The italics are my own, and in this line we have the architectural essence of the quotation. Paraphrased, it might run thus :—Every one having a house to build runs not with hasty hand to begin the work, but waits awhile to prepare his design first of all, that he may be sure to win his purpose in the end. Of course the whole difficulty of the passage is wrapped up in one line. What did Chaucer mean by sending the heart's line out from within? Compare for a moment Shakespeare :—

> When we mean to build,
> We first survey the plot, then draw the model;
> And when we see the figure of the house,
> Then must we rate the cost of the erection.

Here, evidently, drawing the model or figure of the house is the parallel to—

> Send his hertis lyne out fro withynne.

But already what a difference appears? The question of surveyors *versus* architects is, I venture to say, no new one. Anyone who will take sufficient trouble can see that, even as early as Queen Elizabeth's time, scores of buildings were erected more or less—and rather more than less—after a regulation pattern The heart's line or ideal measure had nearly run out, and buildings were no longer to be the outcome of poetical fancy. What we understand by the word "feeling" in art was to be regarded as a weakness. For another sort of line, the measuring line of the surveyor and the poetry of the two-foot rule were now to have their innings. To survey a plot of ground, to make the design of a house, and to take out the quantities of it, were occupations which, unfortunately for the quality of the second, soon grew to be considered much-of-a-muchness. Even Shakespeare catalogued them together; but, although Shakespeare's appreciation of architecture might have been of a lower order than that of Chaucer, we should not hastily conclude from this single passage that Shakespeare sided with the surveyor, or thought his work worthy to be spoken of with the work of the artist-architect. To one who did so conclude, Macbeth's words might be quoted with advantage, and he might learn that—

> Hounds and greyhounds, mongrels, spaniels, curs,
> Shoughs, water-rugs and demi-wolves, are clept
> All by the name of dogs.

But whatever Shakespeare thought about the value of architectural design, whether he thought it came by rule, like surveying, or by the exercise of the poetical well-spring—imagination—is very little to the purpose of my present inquiry. To Chaucer, a man by no means blind to what are called practical questions, as we have seen in his incisive note on theatre seats, imagination in architecture was not merely of paramount importance, but was of the very essence of the art. There is this, however, to be considered, that imagination alone will no more make an architect than will an aptitude for convenience of arrangement, or a readiness in duodecimals. Just as words to the poet are the vehicle for the manifestation of his heart lines, so is the actual building to the architect. The latter has, however, this advantage in the comparison, that he cannot write his own poem, but must dictate it, dumb-like, to a number of scribes by means of very elaborate signs and symbols, which we call drawings. That many of these drawings—*e.g.*, the full-size details and the large scale working-plans—were drawn by the chief craftsmen is probable; at the same time *the lines* of any important art work would be set down alderfirst by the *clericus* or artist who had received the commission to do the work. That Chaucer's appointment as clerk of the king's works should have been accompanied by a special permit to fulfil the duties of his office by deputy is, to say the least, suspicious. Moreover, it must be remembered that the poet was about sixty years of age when he accepted this office; that the year in which he was appointed (A.D. 1389) saw also the return to England of the Duke of Lancaster; and that his previous dismissal from the office of Comptroller of the Customs (which he had for some time held by deputy) curiously enough coincided with the departure of John of Gaunt. It will not, therefore, be thought unreasonable or uncharitable if we conclude that Chaucer's qualifications for the office of king's architect were mainly discovered by his royal brother-in-law. We may not unreasonably suppose that he was experienced in the matter of accounts, and was competent to fulfil the financial duties of his office. That he was drenched through and through with the most refined art feeling, that he had the most acute perception of what constitutes the beautiful and the picturesque in architecture, and that he had experienced what it was to "send his hertis lyne out fro withynne," may possibly be accepted by every student of Chaucer. But it is hardly within the range of possibilities that a man of sixty, whose life had been mainly devoted to politics and poetry, should have had time or opportunity to have acquainted himself with the technical duties of the office of king's architect. Regarding Chaucer in the light of modern days, one is almost inclined to look upon this appointment as a mockery. Indeed, the history of the last fourteen years of his eventful life is far from cheering, for although the materials are but slight they tell us quite enough of sadness. In 1386 his best friend left England and he himself was dismissed from the lucrative office in the Customs he had held for twelve years. In 1387 his wife died. In 1388 he surrendered his two grants of forty marks to one Scalby. In 1839 his friend returned and Chaucer obtained the appointment of clerk of the works. The Duke of Lancaster's influence was now fast waning. In 1391 we find one other than Chaucer holding the office of clerk. In 1394 he manages to get from the king an annuity of twenty pounds, and this, as far as we know, is the sum total of his income. In 1397 he seeks and obtains the king's protection for two years—which, in other words, means freedom from arrest. In 1398 the king grants to him a pipe of wine annually. The following year witnessed the deaths of King Richard and John of Gaunt. The new king was true to his father's old friend and confirmed at once King Richard's grants, adding a new grant of forty marks. This care for what Chaucer calls his "worldly welefulnesse" comes only just in time for him to dream his last dream in peace; the day was close at hand when he should rise up at the voice of the bird, and all the daughters of music should be brought low, for in the first year of the new century, when the last leaves were falling, there issued from a small tenement within the shadow of the subtle compassings of Henry's great chevet at Westminster a few sad-faced men who bore to its last resting-place in the south transept the dead body of Geoffrey Chaucer.

And now it is necessary to ask the question, What was the cause of Chaucer's retirement from the office of clerk of the king's works? Two shillings a day in Richard II.'s reign was a very good income, and not to be resigned without sufficient cause. To write with his own hand all the rolls and reckonings of a comptroller of the customs of wool could not possibly have been more to Chaucer's liking than to preside by deputy over the architectural works at the king's palaces, and yet he retained his office at the Customs for twelve years (the later years by deputy), and only gave it up on compulsion. His circumstances at this time were such that he stood in much need of the pay derived from this office. He had disposed of his annuities only the year before he obtained this appointment, and was driven to borrow small sums of money, in value equivalent to little more than a five-pound note of the present time. An artist in such a position—fond of good living, with expensive though refined habits of life—would be the very last man to voluntarily relinquish a position of such dignity and such good pay, and moreover one that was to all intents and purposes a sinecure. No question of conscience either can be admitted, for these appointments were but ordinary methods of recognising services rendered to the Crown, and we must bear in mind that Chaucer, quite independently of his writings, which were hardly recognised by the kings, had rendered in the first fifty years of his life important aid to both Edward and his grandson in missions, embassies and treaties, wherein the combination of culture and insight into character which Chaucer possessed in such a mighty degree was an indispensable qualification. We are thus invited to the conclusion that the young, weak, vacillating Richard, always open to new influences and always ready to provide for new favourites, made a victim of Chaucer, as he did of too many others. That Chaucer was old in years was in itself a prime disqualification in the eyes of the wilful young monarch. That the poet was supported by the friendship of the king's uncle was anything but a recommendation to one who the self-same year as that in which the appointment was made, having grown at last impatient of control and advice, turned his back upon his uncles and dismissed his Council with a curt demand for the seals of the Chancellorship and the keys of the Exchequer. The marvel is, not that Chaucer should have lost the appointment, but that, in the ebb and flow of the favour of such a king, he should ever have floated back to the comfortable position of an annuitant in the receipt of twenty pounds and a pipe of wine per annum.

NOTE BOOKS.

THE following communication from John H. Gregory, assistant engineer, Improvement of Water Supply, Philadelphia, appears in the *Engineering Record*:—It has been said that an engineer's private note book is his stock-in-trade, and it is the purpose of this article to present to the readers of this paper a convenient method for keeping such a note book, which Mr. Wm. B. Fuller and the writer have employed extensively for some time and to great advantage.

In brief, the method, although not new, is that of keeping the notes on single sheets of paper of a standard size and binding with McGill fasteners in a cloth cover, such as is used by college students for preserving their college notes. There are several sizes of such covers, but the most convenient, in the writer's opinion, is the $6\frac{1}{4}$ by $9\frac{1}{4}$ inches, which gives a good-size page for writing and possesses the advantage of stacking-up with the ordinary octavo volume so extensively used for engineering text-books. These covers are made with inside flaps for binding the sheets together, thus protecting the McGill fasteners from catching when the cover is placed on a shelf with other books.

With the ordinary bound note book, notes are generally recorded as occasion requires, and unless blank pages are left, after a time the book is filled with memoranda on various subjects, in no logical order, those relating to one subject being scattered all the way through. Of course, the book can be indexed and should be, but even then it means an unnecessary expenditure of energy to follow all the notes on one subject. By using the system of single sheets of punched paper, notes always can be filed in the right place.

The paper should be $5\frac{3}{4}$ by 9 inches, which is the proper size for the cover, this being a little smaller than the cover, so that the edges may be protected. Any paper may be used, but it is especially desirable that it should be unruled, thin, and, if possible to obtain, free from water-marks, although the last requirement is a minor one. By the use of thin paper a large number of sheets can be bound together without unnecessarily encumbering the book, and it further admits of holding the book open easily. It possesses still another advantage, that of obtaining a duplicate of the notes, if for any reason this is desired, by the blue-print process provided a suitable writing-ink is used. Most of the ordinary writing fluids are not suitable for obtaining a blue print, but the writer has, after trying several, been using in his fountain pen Carter's raven black ink, which gives fairly satisfactory results, but not quite as good as a black drawing ink. He also makes a practice of never making any notes except with this ink. Other inks which he has not tried may, however, give equally as good, if not better, results. It is also imperative that the paper should be of good quality, for if this is not observed and if the notes are often referred to the paper will show signs of wear.

Paper, of course, can be cut to the required size, but Crane's thin linen can be obtained exactly $5\frac{3}{4}$ by 9 inches in tablet form of 100 sheets, costing 20 cents. This has, however, a water-mark, but the fact that it is a standard article, unruled, thin, of excellent quality, and well secured in tablet form with covers and blotter, thus doing away with loose sheets, outweighs the water-mark objection.

In making notes the paper should, for convenience, have writing on one side only, the reason for which is obvious. In order to obtain a neat appearance a sheet $5\frac{3}{4}$ by 9 inches of black lines with a margin should be ruled and placed under the paper while writing. The exact spacing of these lines is a matter of choice. The writer has two or three sets of these lines, but the one most employed has one margin line $\frac{3}{4}$ inch from the left-hand edge to allow for binding, and another $\frac{1}{2}$ inch down from the top to leave a space for a title. The rest of the sheet is ruled with cross-section lines, spaced five to the inch, and, beginning at the margin and top lines, every fifth line is strengthened.

The ruling of these lines should be accurate, not approximate, in order that, if it is found desirable to incorporate in the notes a diagram, it can be plotted and the cross-section lines traced, without having recourse to a separate sheet of cross-section paper. The vertical lines and the strengthening of every fifth line is also very convenient when tabulating figures in columns, as it serves as a guide in keeping the columns vertical, and for quickly counting how many spaces are needed for one column, when the number of columns and the number of spaces across the sheet, which is just twenty-five, are known. No notes should be written to the left of the margin line, as they will be concealed when the sheets are bound in the cover. When the sheet is removed from the tablet it will present a clean appearance free from horizontal or cross-section lines, and much easier to read.

After the sheets have been written they should be punched together and bound in the proper place in the cover. For punching it will be convenient to cut a template out of leather-board or cardboard the exact size of the sheet, with the holes corresponding exactly with the holes in the flaps. Care should be taken to see that the top and right-hand edges of the sheets fit exactly the corresponding edges of the template before punching, in order that any slight unevenness in the size of the paper may appear at the bottom and back of the sheets. This will insure when the sheets are bound in the cover almost as uniform edges at the top and sides as in a bound book.

In making small diagrams or blue prints, it will be found desirable to keep two of the border lines, if possible, just 9 inches apart, leaving border enough the other way, so that they can be trimmed down and bound with folds only in one direction.

The writer has at present eight of these covers in use classed under various heads, as filters, hydraulics, sewers, miscellaneous, &c. If a thing is worth preserving it is worth preserving well, and in such shape as will always be readily accessible.

The above method of keeping notes has been described in detail with the hope that others may see some of the advantages which it possesses, and that they may profit by the experience of others. At first sight it may seem to be complicated, but in practice it is very simple. The cost of one cover with 100 sheets of paper is but 55 cents, which is as cheap, if not cheaper, than most well-bound note-books. The writer is of the firm opinion that if but a fair trial of this method is made the old note-book method will be discarded, and if any suggestions or improvements can be made they will be gladly welcomed. The writer and some others have actually transferred their most valuable notes to this system, by doing a sheet or two a day, which requires but a few minutes, and the convenience for reference, instead of looking through the pages of old note books, has far outweighed the time spent in copying.

OLD ENGLISH FURNITURE.

A LECTURE on "English Furniture of the Eighteenth Century—Chippendale to Sheraton," was delivered, under the auspices of the Leeds School of Art, by Mr. Edward H. Hepper on Monday. The chair was taken by Mr. W. H. Thorp. Mr. Hepper said that prior to 1739 there were no works on furniture design published in England. "The Gentleman and Cabinet Makers' Director," published by Thomas Chippendale in 1754, was the first book of its kind issued in this country. Other volumes bearing upon cabinet-making and kindred subjects were subsequently issued in quick succession by Edwards and Darley (1754), Thomas Johnson (1758), Ince and Mayhew (1760), the Society of Upholsterers (1760), Mathias Lock (1765), Manwaring (1766), and the brothers R. and J. Adam, who worked something like a revolution in design. Thomas Chippendale was a native of Worcester, though the precise date of his birth could not be ascertained. His father was a chairmaker, who established a business in London. Among those who more or less influenced Chippendale in his work were Marot, of Amsterdam; Androuet, a Frenchman, and Erasmus, of Nuremberg. Chippendale's work was excellent alike in design and workmanship. A great feature of it was the way in which French, Gothic and Chinese ornaments were combined so as to form one harmonious whole, and this without any garnishing or inlaying. Chippendale put some of his best work into his bric-à-brac cabinets, which were coming into vogue in his time. He did not make sideboards, as so many imagined, but side tables. Chippendale had his follies, and often overloaded his ornament, but such defects, said Mr. Hepper, might be attributed to the dictates of fashion and the vagaries of public taste which Chippendale was called upon to satisfy. One whose work was rapidly growing in estimation was Heppelwhite, who, whilst forming a sort of connecting link between Chippendale and Sheraton, avoided the extremes of both those designers.

Heppelwhite's chairs were marked by grace, delicacy and beauty of treatment and outline. The skirts of ladies and the coats of men did not take up so much space in Heppelwhite's time as Chippendale had found it necessary to allow for, and the seat of the former's chairs was accordingly smaller. A shield formed Heppelwhite's favourite chair-back, which he freely ornamented by means of Prince of Wales's feathers wheat ears, "swags," urns, and other designs. Heppelwhite's chairs stood upon "spade" feet, and in many instances had designs painted upon them by Angelica Kauffmann, Cipriani, Pergolesi, and other eminent artists.

Thomas Sheraton was born in 1751 at Stockton-on-Tees, where he learnt the art of cabinet-making. He was the author of a series of manuals of furniture design, five of which were issued between the years 1791-1806. His work reflects the exercise of much taste and ingenuity, especially in his sideboards and dressing-tables. Sheraton did not adopt the cabriole leg, but in his chairs, writing-tables and occasional pieces rather affected the square taper, or turned leg. With him carving was made subservient to outline. Unfortunately in his later years he came under the influence of the "Empire" style, and was led to produce much that might be deemed extravagant and in questionable taste. Concluding, Mr. Hepper said that modern furniture could be made as good and durable as that of old if people were only willing to give the price. There was, however, too much machine and too little hand-work noticeable at present, and so far from setting a style for future generations, most of the furniture that was now being manufactured would not even last long enough to become second-hand.

The lecture was illustrated by upwards of one hundred lantern slides, many of which were lent by the authorities of the South Kensington Museum.

ANCIENT LIGHTS.

AT the meeting of the Incorporated Law Society at Weymouth on Tuesday, Mr. E. K. Blyth, London, discussed the question of ancient lights from the ethical and practical point of view. This rule of the law of England, resting upon statutory authority since 1832, did not exist, so far as he was aware, in any other country. It was the rule by which, if a man built a house with an aperture in the side wall overlooking the property of his neighbour, that aperture became in twenty years an "ancient light," and the ordinary legal right of the adjoining owner to build on his land or to heighten existing buildings was thereby curtailed. Mr. Blyth's examination of the subject led him to the following among other conclusions:—That the enactment of the Prescription Act, 1832, by which a man may be partially deprived of the right to build on his own land by an act of his neighbour which he cannot prevent or restrain, and against which he can only protect himself by going to the waste expense of a retaliatory wall or blocking erection, was wrong, and ought to be repealed; and, further, that great practical injury arose from the present state of the law, especially in large and crowded cities, in which it interfered most seriously with the full user by landowners of their land in accordance with their proprietary rights and the requirements of constantly growing commerce. He moved a resolution inviting the council to take steps with a view to getting the law considered by the Legislature, and, if thought fit, to co-operate with the Royal Institute of British Architects and the Surveyors' Institution.

This was seconded by Mr. Grantham Dodd and agreed to.

WINCHESTER CATHEDRAL.

THE Dean of Winchester has issued the following appeal:—

More than four years have elapsed since I first appealed to the public for assistance in meeting the very heavy cost about to be incurred in repairing the roofs of our great cathedral—the longest in England and in Europe, with the exception of St. Peter's at Rome. A very prompt and generous response was made to the appeal from the diocese and the country. More than 7,000*l.* was raised in one month, including 1,000*l.* contributed by ourselves—the Dean and canons.

The work was begun in April 1896, and by November 1898 the central roof of the long nave, the roofs of the north transept, of the south side of the choir and of the south aisle of the choir had been releaded, and the timbers, where necessary, replaced or repaired. The stone vaulting also of the nave, which was in a very critical condition, has been thoroughly repaired—a difficult operation which required great care and skill. The total cost of these great works has been 11,918*l.* 10*s.* 11*d.*, of which 1,250*l.* is still due to the contractors, Messrs. Thompson, of Peterborough. A further sum of about 2,700*l.* is required for repairs not yet taken in hand, and when these are completed the roofs of our grand historic minster will have been made sound throughout their vast length for many generations to come.

After the first very successful start various incidents checked a rapid flow of contributions to the fund—the Queen's Diamond Jubilee in 1897, the Clergy Sustentation Fund, the King Alfred Commemoration Fund, and last, but not least, the war in South Africa, during which I have entirely desisted from pressing the appeal for the cathedral; but the time has now come when I am compelled to urge it once more, and I venture to think that no more suitable thankoffering could be made by our diocese for the termination of the war than the completion of the repair of this noble church, which has been associated for centuries with our national history. There must be many also outside the diocese, and especially old Wykehamists, who take a warm interest in the cathedral, and may be glad to contribute something to help in securing its stability for ages to come.

Donations may be forwarded to me, or to Messrs. Prescott, Dimsdale & Co.'s bank, Winchester, marked "Cathedral Roof Repair Fund."

BALDASSARE PERUZZI.

AMONG the great architects of the sixteenth century Baldassare Peruzzi should always be reckoned, although it must be said his misfortunes generally interfered with his opportunities of rendering full justice to his talents. He was born in 1481 in Siena. But in his infancy the family found it necessary to seek safety at Volterra from the civil broils of the district. This city of refuge being afterwards sacked, the family returned in indigence to its original settlement at Siena. Baldassare, having been initiated in geometry and perspective turned to design and painting for subsistence, with uncommon credit; but, to indulge his genius and enlarge his means of living, soon joined the study of architecture to his former pursuits, and with equal success. Rome was then the general resort of all who cultivated the fine arts with a desire of excellence. After executing some subjects in a chapel at Volterra, he accompanied a painter of that city, named Piero, to Rome, where the latter was employed by Alexander VI. The death of that pope frustrated their scheme of working in concert at the Vatican; however, Baldassare remained for a while at Rome, where he painted some frescoes in the church of S. Onofrio and in that of San Rocco à Ripa, and distinguished himself by some others at Ostia, particularly by one in chiaroscuro, representing a siege by Roman warriors, and remarkable for the strict fidelity of the ancient military costume, which he derived from bas-reliefs and other existing monuments.

Baldassare found a warm patron in Agostino Chigi, who was a native of Siena, for whom he built a palace alla Lungara, which, having since passed to the house of Farnese, now goes by the name of the Farnesina. There he moreover displayed the magic of his pencil in what was then quite a new career of art, namely, architectural perspectives and scene-painting, and the science of perspective and its application to pictorial illusion and effect. To what perfection he brought this branch of art may be judged from what Vasari relates, who says that on his taking Titian to see some of Peruzzi's works that great painter could hardly believe at first that the objects were not real. Of his astonishing performances in scene painting there is now no evidence, but some idea of his extraordinary ability in it may still be formed from the painted architecture, &c., with which he decorated a gallery in the Farnesina. Bottari, in a note to the Neapolitan edition of Vasari, affirms that all these paintings of Peruzzi, excepting some clair-obscures on out-walls, were in good preservation in 1759, and the painted cornices still of a relief that deceived every unapprised spectator.

Transferring himself for awhile to Bologna, he there made two models in different manners for the front of S. Petronio, and other designs for the service of that fabric. In the same city he repaired, with additions, the palace of Gio-Battista Bentivoglio very dexterously, adapting new constructions to the preserved parts of the old. The portal of the church of St Michele in Bosco, at a little distance out of Bologna, was of his invention. At Carpi, in the States of Modena, he gave the design and model of the dome, which was executed under his direction, and began the church of St. Nicholas.

Returning to Siena, he planned the fortifications of that city and made designs for some houses in it. After these engagements were completed, repairing again to Rome he was employed by Leo X. in the fabric of St. Peter's, for which that pontiff began to think the plan of Bramante too extensive, and therefore wished for another which might appear sufficiently magnificent under less dimensions. This the ingenuity of Peruzzi soon furnished, as may be seen in Serlio's book. The tomb of Adrian VI in the Church dell' Anima was designed by Peruzzi; the sculpture was executed by Michel Angelo of Siena, with his assistance.

When the "Calandra" of Cardinal Bibiena (the first Italian comedy in prose) was performed before the Pope, the theatrical decorations were contrived by Peruzzi, who exhibited two scenes of such striking effect as to excite the emulation and inform the practice of those who followed him in that line of painting. Under his conduct were likewise made the preparations for the coronation of Clement VII. in 1524.

In less than three years after (1527) he was made prisoner, stripped of all he had, and ill used by the Spanish soldiers in the sack of Rome by Charles de Bourbon, rebel constable of France. From his appearance he was taken for somebody of importance, and tortured for discovery of his supposed valuable effects When found to be a painter his captors obliged him, notwithstanding his evil plight from their cruel treatment, to make a portrait of the constable, who was killed as he was mounting the ladder to the assault. Escaped from his persecutors, Baldassare embarked for Porto Ercole in his way to Siena. On his road thither he was again assaulted, and so completely despoiled as to be obliged to proceed on his journey naked.

When through the care of his friends he had recovered and was supplied with necessaries, he undertook the execution of his own designs for the fortification of Siena. Resolved not to act against his country, he refused to serve the Pope (Clement VII.) in the siege of Florence. The pontiff, by the good offices of three cardinals, friends to Peruzzi, was, after some time, so far reconciled as to allow him to return to Rome, where he built two palaces for the family of Massimi (one of them an oval of very difficult construction). Instead of being perplexed by the awkwardness of the site, he availed himself of it to curve the front of the building, and thereby produced so happy an effect that the form seems to have been entirely the result of choice, and independent of other circumstances. The loggia and small inner court are singularly beautiful, and the whole edifice deserves the attention it has received in a folio work by Suys and Haudebourt, containing outline engravings of all its parts and details He also made designs for two villas of the S. S. Orsini, near Viterbo, that were carried into execution, as likewise others for edifices in Puglia.

In this situation he began a treatise on the antiquities of Rome, and a commentary on Vitruvius, making drawings for the latter as he went on with the work. Parts of these undertakings were, when Vasari wrote, in the hands of Francesco Sanese, his disciple, Sebastian Serlio, a Bolognese, and Giacomo Melighino, of Ferrara, architect to Paul III., became possessed of the remaining part of what Peruzzi left behind him. The former profited largely by his collections, observations and designs in composing his own book on architecture.

The court of the palace of the ducal family of Altemps, in Rome, is supposed to have been repaired and refitted by Peruzzi. The palace of the Marquis Silvestri, opposite St. Lorenzo in Damaso, and the house of Giuseppe Costa in Borgo Nuovo were built after his designs; the latter was probably taken down for its vicinity to St. Peter's.

This great architect and painter was born in family distress, harassed through life with misfortune and never in any comfortable degree approached to easy circumstances. His attention was more earnestly exerted in the attainment of professional excellence than of the gain due to his services. Of this indifference to pecuniary reward the most opulent of his employers are said to have taken such unworthy advantage as left his mind a prey to anxiety for the fortunes of his family, and his health to decline under that pressure, without the alleviations of domestic convenience. His salary was no more than 250 Roman crowns a year as architect of St. Peter's. In his last days the reigning pope, Paul III., sent him 100 crowns, with many unseasonable offers of promotion. Thus is acknowledged merit when unassuming, as it generally is, left to live on empty praise, while the man of mean talents, backed by effrontery and upheld by intrigue, states his own claims, and none dare to delay or refuse them. Peruzzi was buried in the Rotonda, Rome, by the side of Raphael d'Urbino. Among his pupils was Sebastian Serlio.

THE COMING OF THE RAILWAY.

A CORRESPONDENT of the *Scotsman* writes:—It is over one hundred and fifty years since preparation began to be made for the coming of the railway. Before then there were no roads—only foot tracks skirted the bases of hills and cunningly circumvented the bogs. "Our guides," wrote a traveller of those days, "scouted through the bogs looking for safe paths much as an Indian scouts the primeval forest." It was the same all over the North till General Wade pierced through the mountain fastnesses with his military roads. One of these he laid across the mouth of our glen, linking us to the chain of forts which dominated the Highlands. That was the first preparation for the coming of the railway, for the carts with their loads of sleepers and rails and all the chaotic materials that make a railway have for the last three years rolled over General Wade's road just as if the general had constructed it there for the convenience of the contractors. When the road had become a matter of history.there came just 100 years ago the greatest undertaking ever carried to a triumphant issue in the Highlands. The three lochs which had lain for ages useless in the basin of the great glen were joined together and to the sea by four links of water, and now they bore the merchandise of the nations from east to west. It cost a million of money, but it was the first great public benefit conferred on the North, the first attempt to bring industrial activity to the land of forays and rapine. Then the wild Highlander saw the great ships laden with strange merchandise sail among his mountains and beneath the shadow of his crags. But soon he saw a stranger thing—a great ship moving among the hills in the teeth of the wind with an ugly craft dragging it and belching out smoke and soot as if it were a floating inferno. The towing paths were now deserted; the profanity of the impatient captains that had to wait for weeks for a wind to carry them through the glen was heard no more, and the towing path wherewith the side of Loch Oich was threatened was happily never constructed. As men saw the swift steamers ply with their crowded decks from sea to sea they thought the climax in the development of travelling was reached. But it was not so, and for the last three years the Caledonian Canal has paid its way only because it was so excellent a preparation for the coming of the railway, enabling piles of materials to be landed at any place without trouble or cost. Thus the march of progress goes on. Standing by a bridge in our glen one can see all the eras of travelling in one and the same hour. The picturesque tramp with his worldly goods all tied up in one red handkerchief passes stolidly by; the canal locks open slowly and cumbrously, and the fishing boats pass through to reap their silvery harvest, and in their wake comes the great steamer with its crowd of sightseers, churning the erstwhile still waters of the loch; while on the road the wheeled traffic, carts and carriages, pass on; a bicycle comes with its bell ringing impudently as if the road was its alone, and passes the horse traffic with scorn, and a motor comes and passes the bicycle with equal scorn; and up the hill side a few score yards away with a screech and a rush comes an engine dragging trucks of soil for the dressing of the railway embankments. In that one spot in the one hour the ages seem to meet. Surely there are few such spots.

For many years we congratulated ourselves on our travelling facilities. No place in Scotland had a canal like ours, with steamers passing every day. Other glens had mail-gigs; we had cabins and saloons. But as time moved on we fell back in the march of progress, for the railway came to the other glens, and we began to tell each other what an antiquated mode of travelling canals, with their narrow locks and irksome delays, were. We must have a railway too. The canal had had its day; if others got iron-roads so must we, and we let our voices be heard. And if we were anxious for a railway, the great railway companies were still more anxious to present us with what we wanted. We found ourselves like a fair maiden for whose hand there are several suitors, and she is uncertain which to choose. We had three suitors—three great companies vieing not for our hand, but for our feet, to make an iron-way for them. So eager was the strife that we looked on the thing as done, when suddenly the conflict ceased and our suitors made an agreement that they would none of them press their suit till twenty years had gone. The wounded feelings and rage of a maid whose suitors agreed that none would propose for twenty years was nothing to our rage and chagrin. We felt that that railway was more necessary than ever. Any other glen would have given it up in despair, but we were made of sterner stuff. If they would not construct our railway, why not form a company that would? No sooner thought than it was done; to their dismay the railway companies were dragged to Parliament by a company born yesterday to fight for the privilege of constructing our railway, and the august legislators with whom wisdom is were so filled with admiration at the pluck of our Benjamin among companies that they entrusted it with the privilege of constructing a railway half through the great glen from Lochaber to Fort Augustus. Thus it was that three and a half years ago the first sod was cut and a beginning made with our railway.

And now it is almost finished in all its twenty miles, and we were privileged in passing over the most part of it the other day. It is surely something to be among the first to pass over a new road—to be in the vanguard of a great multitude who will pass this way and feast their eyes on these wondrous scenes. It is like getting possession of a first edition of a great book—the pleasure is much the same. But though among the first, we were not the first to pass this way. A day or two before a noble lord passing south from his deer-forest, where he had slain his scores of stags, passed over it with a retinue that filled eight carriages—a "tail" such as no chief that ever ruled from the crag where the ruined castle now casts its shadow over Loch Oich could ever boast of. The light engine sent to draw the train proved too weak for the load; it puffed and panted, and only with difficulty and after an hour's delay reached the junction. That evening, away down Loch Lomond side, many an impatient traveller in a train standing at a siding asked angrily, "What are we waiting here for?" only to get for answer, "Special to pass, sir; late." Next day we heard of it, and we rejoiced quietly, and said, "Our railway is already making itself felt down south." We did not grudge his lordship the privilege of being the first to pass over the line, for without him we would never have had our railway—not, at least, till we were old and grey, with the frosts of twenty winters. We watched with a quiet content the river that runs to our left as we left the junction. It flows in a deep, rocky channel with many a dark pool where the salmon lie in their season, and its banks are brown with seared bracken, and the hills above it are green and flecked with heather. Soon Loch Lochy burst on our view, so we rushed along the braeside 200 feet above its level. From the steamer you see the hills, from the railway you see the hills, and best of all you see the loch. From the steamer it is but tame, from the railway it is magnificent. The mountains that rise sheer from the water some 2,000, some 3,000, feet high, with their crests already white with the winter snows, and their sides still green, but with patches of yellow foliage, the great sheet of water lying very still, reflects the white-sheeted crests, the deep corries where the darkness was gathering, and the wondrous shadows cast over the water made a scene that cannot be forgotten. The line passes through a country of unrivalled beauty. The steep frowning sides o Loch Lochy give place to the more beautiful and wooded setting of Loch Oich. There the woods rise from the water edge, the islands dotted over the loch are green and leafy, the beautiful gardens spreading over the slopes seem like fairyland, the ruined castle on the crag tells its tale of murder and rapine, of war and bloodshed (for three times did the light of its burning flare through the great glen), and near it the stately mansion house stands a monument of taste and luxury. But the railway only passes the portal of our glen, and the traveller who hurries past on the steamer or soon by the railway must not think he has seen the glories of our glen. Railway travelling is not the way to see our dales. The traveller must turn aside and see the "woods cover the mountain sides like the shadow of God and the great rivers flow like His eternity." Let him stand by the waterfall where the accumulated mass of water gathered by a hundred lochs is thrown down the abyss, and gaze on the still waters where a score of hills blushing in the sunset look coyly on the reflection of their own charms; let him in June see the countryside for miles blazing with rhododendrons, and in October let him walk through and see the hillsides where the woods at the first touch of cold turn golden and russet and brown; let him watch the flash of the salmon in the pools and the flitting of the deer as they leap lightly among the trees; let him listen to the myriad voices of nature heard in the woods and on the moor, and he will acknowledge that no railway in Scotland has such a beautiful region to serve as this our railway.

It is not only the beauty of the mountains and lochs and rivers, but the land through which our railway passes is full of historical associations. Every hill has its tale, every river its legend. On its crag stands the ruins of the castle of the MacDonells—the very focus of turbulent tribes that made the throne of the United Kingdoms rock. Within its roofless walls one may well muse over the ironies of history. Cumberland, when last it was burned, did his work well, and it was never restored. There are battlefields where men fought in their shirts till all who fought were dead. There are monuments to rude and rough justice, describing how the gory heads of murderers were washed in a stream and then laid in the castle at the feet of Lord MacDonell and Aros. A century and a half ago the march to Derby began at Aberchalder, when the last hero of romance made the firmament glow like a sunset ere engulfed in darkness for ever. We wonder what effect the railway will have on it all. How strange that this once inaccessible glen should now be linked with an iron road to Edinburgh, becoming as it were one of the capital's suburbs. Will the romance that is left fade upon the coming of the railway? Ah me, the old tongue that still lingers here will get its death blow from it. How is it that railways always kill the Celtic tongue? What the loss and what the gain will be we cannot tell. It is surely a gain that one of the fairest tracts in Scotland will be within easy reach of the wearied dweller in the city for the refreshment of his body mid scenes of fairy-like beauty, and that all the civilising influences of life will be brought within our reach.

Some interesting Roman remains have been discovered at Cottenham by the Rev. Evelyn White, secretary of the local archæological society. They consist of pottery, on which is shown the name of a Roman potter, and a line of entrenchments.

TESSERÆ.

Sculpture and Idolatry.

It has been said that the history of sculpture is almost the history of idolatry. Religious feeling doubtless had its share in forwarding the progress of the arts, for man, even in his rudest state, always has a belief that good and evil emanate from some superior power, and, unable to comprehend a divine essence or spirit, has by degrees been led to offer his addresses to some visible object as its representative. But it seems probable that the first images or statues were of men rather than of gods, and thus that human idols preceded those of divinities. This supposition is strengthened by the fact that the heavenly bodies were the earliest objects of worship among the heathen nations, and the symbols that were afterwards dedicated to them were most likely merely pillars of a conical or pyramidal form, and not imitations of the human figure; and when such works are referred to and called "graven images" by Moses, it has ingeniously been supposed to be in allusion to the signs or hieroglyphics inscribed or cut on them. The sun was worshipped at Emesa under the form of a black conical stone, with marks to represent the sun. Traditional accounts of wonderful feats in arms, the real or fabled history of a conqueror, or a lawgiver, or the founder of a nation, led in all probability to the first attempts at making a portrait figure or image, which a rude and uninformed people, always attracted by the marvellous, associating with it actions of supernatural prowess, would soon learn to contemplate with feelings both of admiration and of awe. Extraordinary respect would lead to the payment of extraordinary honours, and the elevation of heroes into divinities would be attended with little difficulty when time had obscured the real existence of the personages and weakened the remembrance of their actions. The imagination would easily be worked upon while the eye contemplated these first rude attempts at form, and thus men would be elevated into gods.

Architectural Ornament.

Too much carved work is destructive of elegance; if it projects too much it seems to burden the building and threaten its ruin. The sculpture seen in the Baths of Diocletian in the Corinthian style, though of exquisite workmanship, was a fault rather than a beauty. Artists in the classical age of Augustus were sparing of sculpture. The style which is called the Augustan, and is really so, consists of a few small parts distinct from one another, of accurate and bold symmetry, with little carving. At Rome in the Basilica of Antoninus, or rather in the Temple of Mars, the frieze which is pulvinated is placed between two reglets; by this means it is conspicuous itself and does not hide the cymatium placed upon it. The science of optics dictated this rule and others of the same kind, which in the works of the ancients call for our praise and imitation. Variety is agreeable if not repugnant to the rules already admitted. The helices of the Corinthian capitals in the Pantheon, in the Temples of Jupiter Stator and that of Diana at Nîmes, are worthy of imitation, though constructed in different uncommon styles; such a variety is agreeable to the caprices of nature, but those which imitate the horns of rams in the Baths of Diocletian deviate much from propriety and elegance. At Nîmes, instead of the uppermost reglet of the cornice is an echinus underneath; the mutules are inverted. In the Temple of Jupiter Tonans one of the two echines in the cornice is carved in an uncommon manner. In the Temples of Peace, Jupiter and Mars, instead of the cyma recta of the architrave, an echinus is put under the scotia. In the Temple of Fortuna Virilis the height of the entablature is regular, but half of it is given to the cornice. In the Temple of Jupiter Stator the same circumstance occurs, and in both the second fascia only of the architrave is carved. In the Temple of Vesta at Rome the horns of the abacus are not shortened. In her Temple at Tivoli the ends of the channels and the cavity of the trochile or casement are not round, but square, but all these deviations are faultless. In proper places the fancy of the artist wanders secure from error.

Academies of Art.

Instead of following the "mode of feeling" of a distinguished master, to which the pupil attached himself as to something living, until he was confirmed in the development of his own sentiment of art, in academies the cold general rule is substituted, which the young man is strictly bound to follow, according to the infallible direction of the professors, as the only correct method. In this manner in the eighteenth century a great number of works of very limited merit were produced in which all academical rules of composition, drawing and chiaroscuro were strictly observed, which, notwithstanding, appear only as well-executed exercises, and leave the spectator cold, because they are wanting in the first and most indispensable attributes of works of art, namely, the impress of the vivid individual feeling of the artist, which is the real soul of a work of art. If it possesses this "impress" of the artist's feeling we overlook the possible defects in drawing and colour, as so many works of the ancient artists prove; when this impress is wanting, the most perfect acquirements in other degrees of art cannot replace it. The natural result of the academic institutions consequently was that on comparing a number of specimens of the different schools, such as those in Paris, Petersburg and other places, all exhibited a striking similarity of manner, while in the earlier times and in the earlier method of teaching the character of the schools of different nations and that of each individual artist was entirely original and distinct. As, in Dutch gardens, the different kinds of trees were clipped to the same forms, so it was the case in academies with the different talents of different pupils. Would not anyone feel a greater pleasure in the free growth of the trees in a forest in preference to the monotonous uniformity of a Dutch garden? By this academic method, which deadened the natural talent, it is sufficiently explained why out of so great a number of academic pupils so few distinguished painters have arisen. The three most distinguished artists which, for instance, Germany produced in the eighteenth century, namely, Mengs, Denner and Dietrich, owed their education not to academies, but were educated after the old manner. So the two most distinguished of the modern artists of the German school, Cornelius and Overbeck, have risen to eminence in the most decided opposition to the academies; and Sir Joshua Reynolds, Barry, Wilson and Flaxman did not receive their artistical education in an academy. That these men, when they were already celebrated artists, became members of academies, has nothing to do with the question.

Leon Battista Alberti.

By the most assiduous application, joined to the largest opportunities of instruction his father could procure for him, Alberti became one of the most generally learned men of the fifteenth century, and a very eminent contributor to the restoration of literature and the arts. Equally profound and elegant, philosophy, law, mathematics, philology, poetry were all familiar to him. He was practically conversant with painting and sculpture; in architecture superior (taking theory and execution together as necessary to complete the artist) to all of his time. His work "De re ædificatoria" was the first systematical treatise on the subject, since the earliest revival of the fine arts, that received and has retained the approbation of posterity. He distributed it into ten books, in imitation probably of Vitruvius, of whom he appears to have been a little invidiously emulous by his diligence in bringing forward that author's errors in doctrine and faults of style. As a practical architect he was employed in Rome by Pope Nicolas V. in the repair of the conduit of the Acqua Vergine, and for the construction of the Fontana di Trevi, since rebuilt by Salvi, with much magnificence, at the expense of Clement XII. At the same time, Alberti furnished a design for covering the bridge of St. Angelo, one of the most frequented passages in that capital, where multitudes are still exposed to the full effect of a scorching sun in the hottest months, for want of such a protection. For Sigismond Pandolf Malatesta he conducted what is generally considered as his masterpiece, the new works and embellishments of the church of St. Francis at Rimini, left, however, unfinished by him. For Louis Gonzaga, the reigning marquis, among other buildings in Mantua, he constructed the church of St. Andrew, now much deformed in the inside by pretended modern improvements. Though the principal front of the church of Santa Maria Novella at Florence was deemed unworthy of him, the portal is certainly a design of Alberti. The loggie of the Corinthian order and the Doric front of the Palazzo Rucellai in the same town are allowed to be of his invention. Vasari thinks the architecture of a chapel he planned for the Rucellai family in Rome the best specimen of his skill in that art. His writings are very numerous. The titles of some of them are, "Momus," a moral and political work in four books. "Trattato di Matematica," translated by Bartoli from the inedited original. "De Jure" ined, translated by the same with title "Dello amministrare la Ragione." "De Causis Senatoriis," printed at Basel. "Chorographia urbis Romæ antiquæ." "Libellus Apologorum," translated by the same. "Philodoxos, comœdia latina." "Dell' Economia tre libri," Italian. "Dialoghi della Republica; della Vita civile e rusticana; della Fortuna," published by Bartoli. "De Amore et de Remedio Amoris," Latin titles to Italian treatises. Much Latin and Tuscan poetry. "Statua, Latinè" ined., translated by the same. "De Pictura libri tres, Latinè," at Basel 1540; again, with John de Laet's edit. of Vitruvius, Amstel. 1649; translated by Bartoli and Domenichi. Many of his Latin compositions (inedited as well as edited) including his ten books "De re ædificatoria," were translated into Italian by Cosimo Bartoli, a Florentine gentleman. His erudition and his Latin style are equally applauded by the learned of his time. Politian, no spendthrift of praise upon his cotemporaries, is very large and explicit, to his own patron Lorenzo de' Medici, in that of Alberti.

GENERAL.

Mr. W. G. R. Sprague is preparing plans for a new theatre at Southsea, for which a site has been secured.

M. P. Pichon, the French artist, passed away at the ripe old age of ninety-five.

The Dean of Ely will on December 6 deliver a lecture at Bedford College upon "Alan de Walsingham, Prior and Master Builder of Ely Minster."

The Designs by Mr. T. Bell, of Burnley, have been adopted for the technical institute which is about to be erected in Piccadilly Gardens in that town.

The Court of Common Council have voted the sum of 200 guineas in order that a bust or statue of Chaucer might be placed in the Guildhall or Library of the City of London.

Mr. Kingdon T. Frost, late Junior Hulme Scholar of Brasenose College, has been awarded the studentship of the British School of Athens.

The New Theatre at Woolwich, which was opened last Saturday, has been built from the designs of Mr. B. Crewe. It has a frontage of 80 feet and a depth of 160 feet. It is built of red brick, with Bath stone pilasters and dressings.

Mr. F. J. Williamson has been commissioned to restore the memorial, by Roubiliac, to Viscount Shannon, in Walton Church.

Messrs. Spalding, architects, of 15 Queen Street, E.C., have been selected architects of the new baths for Wandsworth, which are to be erected at the cost of 29,291*l*.

At St. George's Library, Southwark, two bronze life-size bust portraits of Sir William Molesworth and Sir Austen Henry Layard, executed by Mr. George Frampton, A.R.A., were unveiled last week.

Mr. R. Norman Shaw, R.A., has readily accepted the invitation of the London County Council to advise upon the designs for the new street from Holborn to the Strand, in association with the Council's architect. He has expressed his desire not to accept any fee, as he states that he is anxious to place his services "at the disposal of a body engaged in the congenial occupation of beautifying the architecture of the city in which one dwells."

The Bishop of Winchester has consecrated the new church of St. Luke at Grayshott, Hindhead. The cost of the building, which has been erected almost entirely of stone dug in the neighbourhood, was about 8,000*l*. The church, which is in Early English style, and has seating capacity for 300 persons, has been erected by local men without a contract, from the designs of Messrs. I'Anson & Son, of Laurence Pountney Hill.

A Private Collection at The Hague has been robbed of over 200 pictures. They included several old Dutch masters, including Ostade and Van der Velden. The thieves were arrested, but it is feared that the canvases may have been damaged, as the pictures were cut out of their frames.

The Architectural Association held their annual conversazione last Friday, nearly 500 members and guests being present. The prize drawings by students of the Association and the work done in the studios and school of design were exhibited. A collection of water-colour sketches by the water-colour class, and sketches by Mr. C. H. F. Comyn, the Association travelling student, were also on view. During the evening Mr. Richard Kerr and Miss Kerr gave demonstrations in connection with wireless telegraphy and the X-rays. Instrumental music was performed by the Bijou Orchestra.

Mr. W. H. Bidlake, M.A., will deliver an address as president of the Birmingham Architectural Association this evening. On November 9 will be read a paper on "Different Types of Classic Ironwork," by Mr. T. S. Elgood.

The Chaucer Window, which was unveiled yesterday at St. Saviour's Collegiate Church, Southwark, is the first of a series of six, the remainder being dedicated to Cruden, Goldsmith, Gower, Ben Jonson and Sacheverell.

A New Board School, which has been built in Johnstown, Ruabon, at a cost of about 4,000*l*, was opened on Tuesday evening.

Mr. Edward A. Harman, engineer to the county borough of Huddersfield Gas Department, was duly elected a member of the Sanitary Institute at the last meeting of the Council. Mr. Harman has done a considerable amount of work in connection with the disposal of sewage. Recently he made several interesting experiments with the sludge, obtaining therefrom illuminating gas to the amount of about 6,000 cubic feet of 13 candle-power per ton of material used, the material containing 28 per cent. of moisture.

A Section of a new church which has been erected on the southern extremity of the populous and growing parish of St. Luke's, Gloucester, was consecrated on the 18th inst. by the bishop of the diocese. The church, when completed, will have cost over 12,000*l*. At present it is completed up to the third bay of the nave, having two bays, the tower, boundary walls and other portions to be added.

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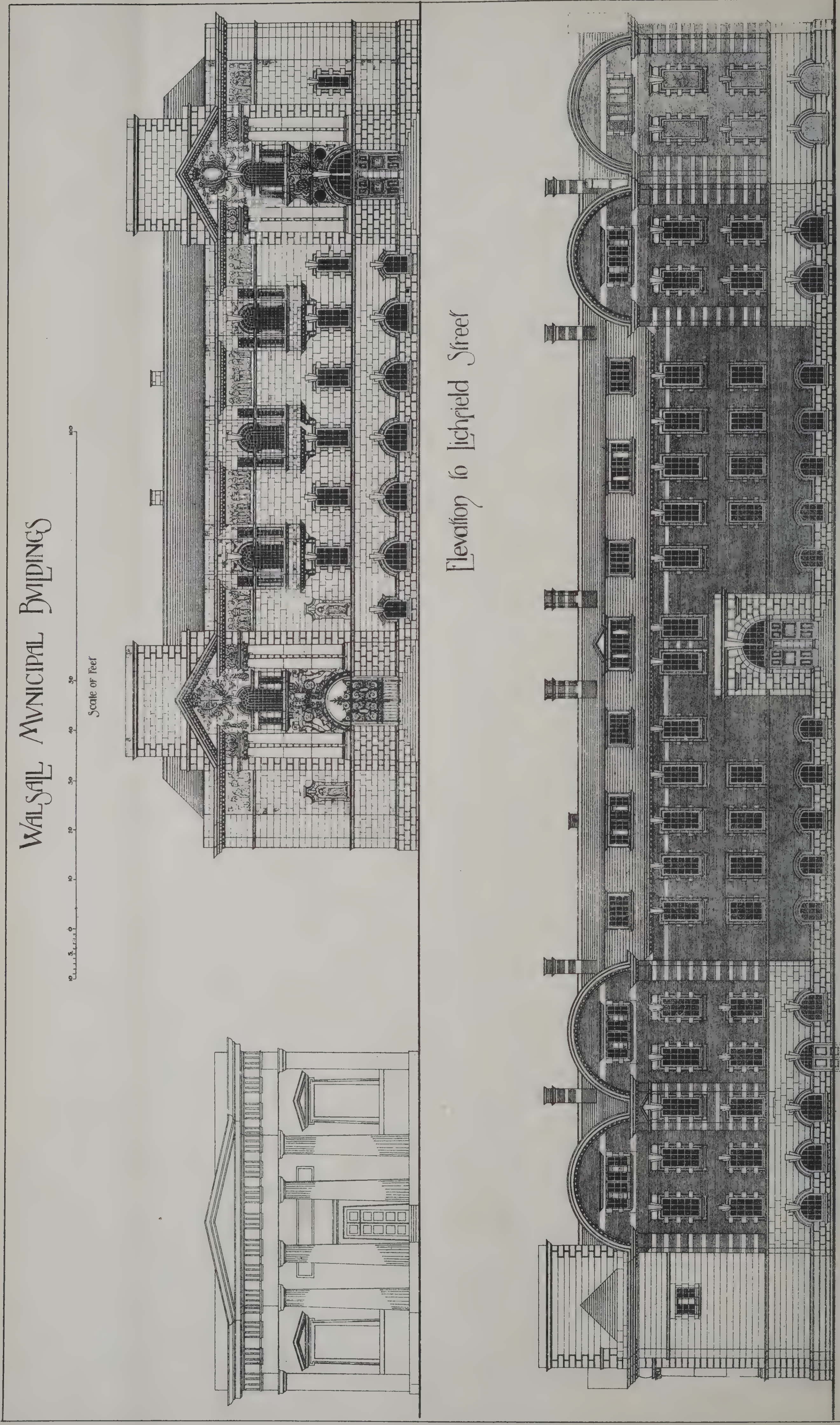

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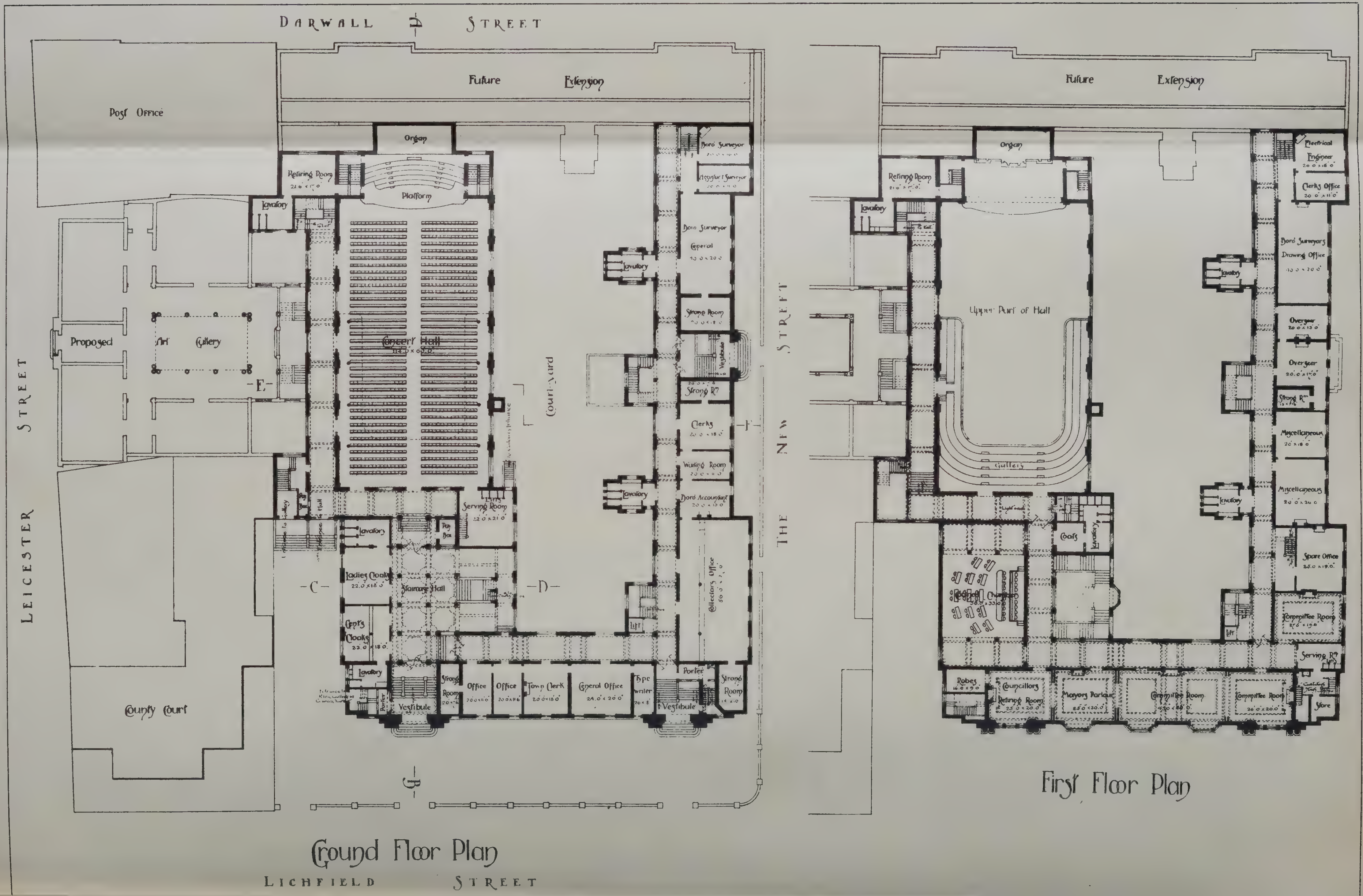
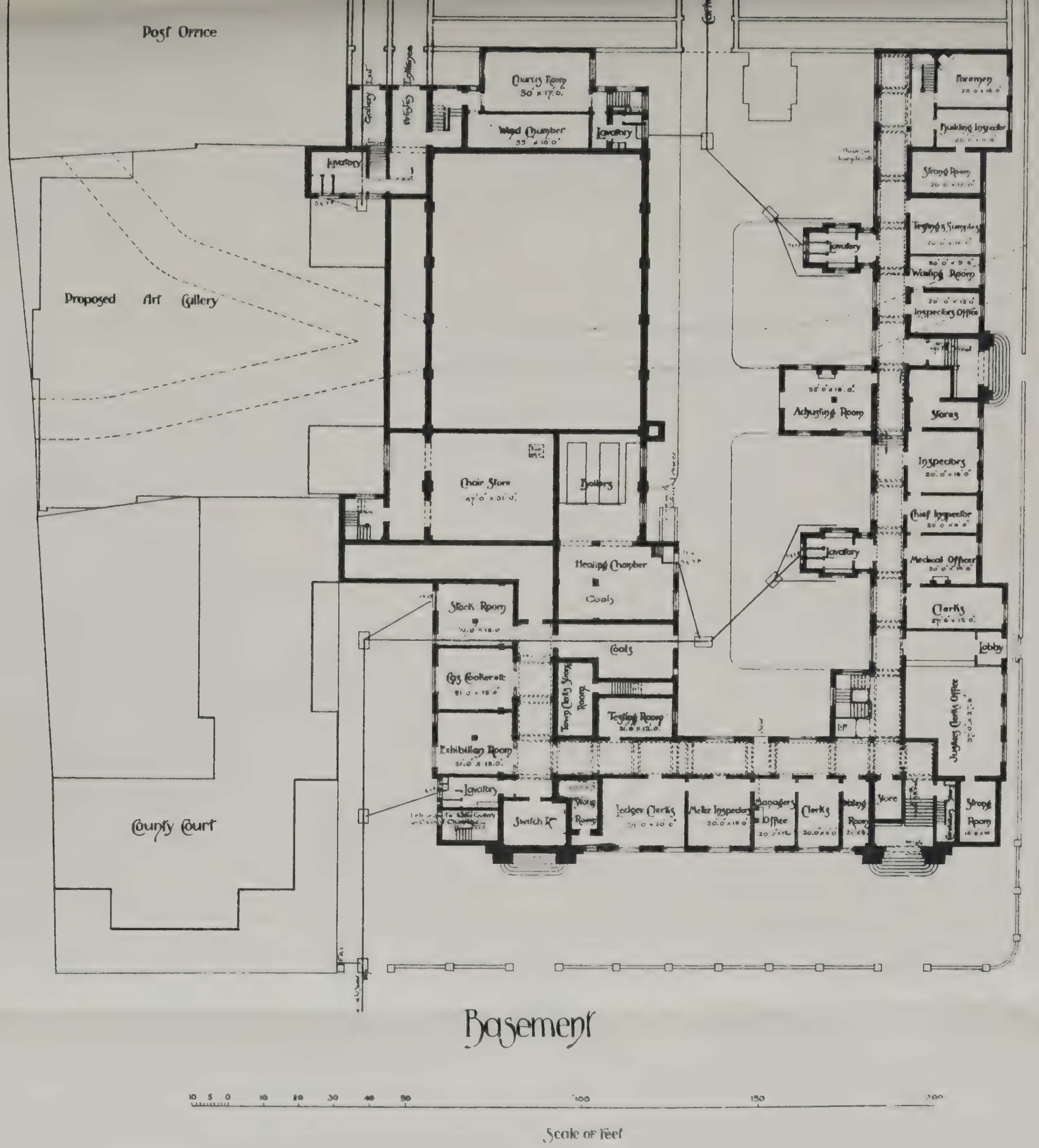


Ground Floor Plan

First Floor Plan



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DESIGN FOR THE NEW WALSALL MUNICIPAL BUILDINGS.

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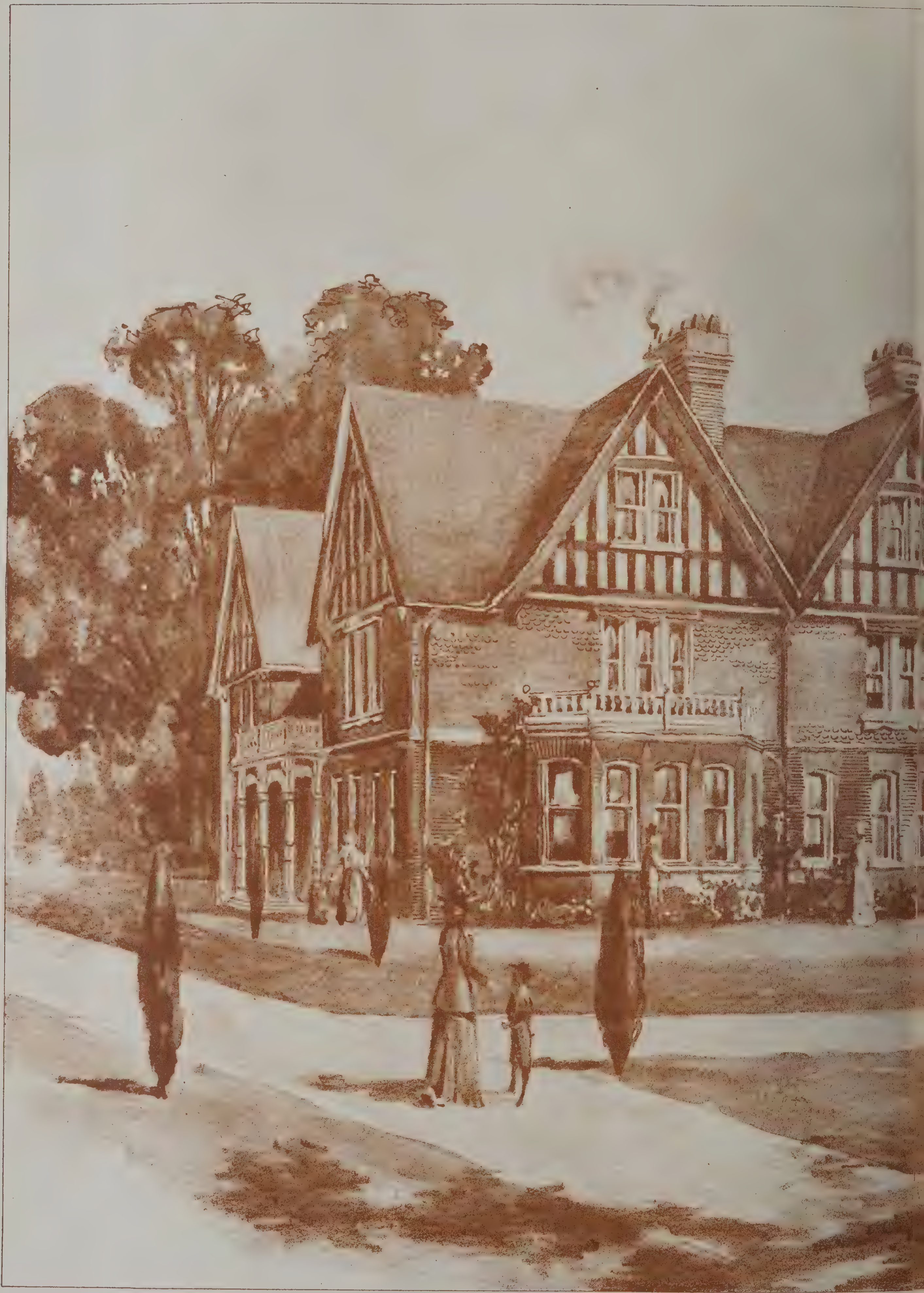

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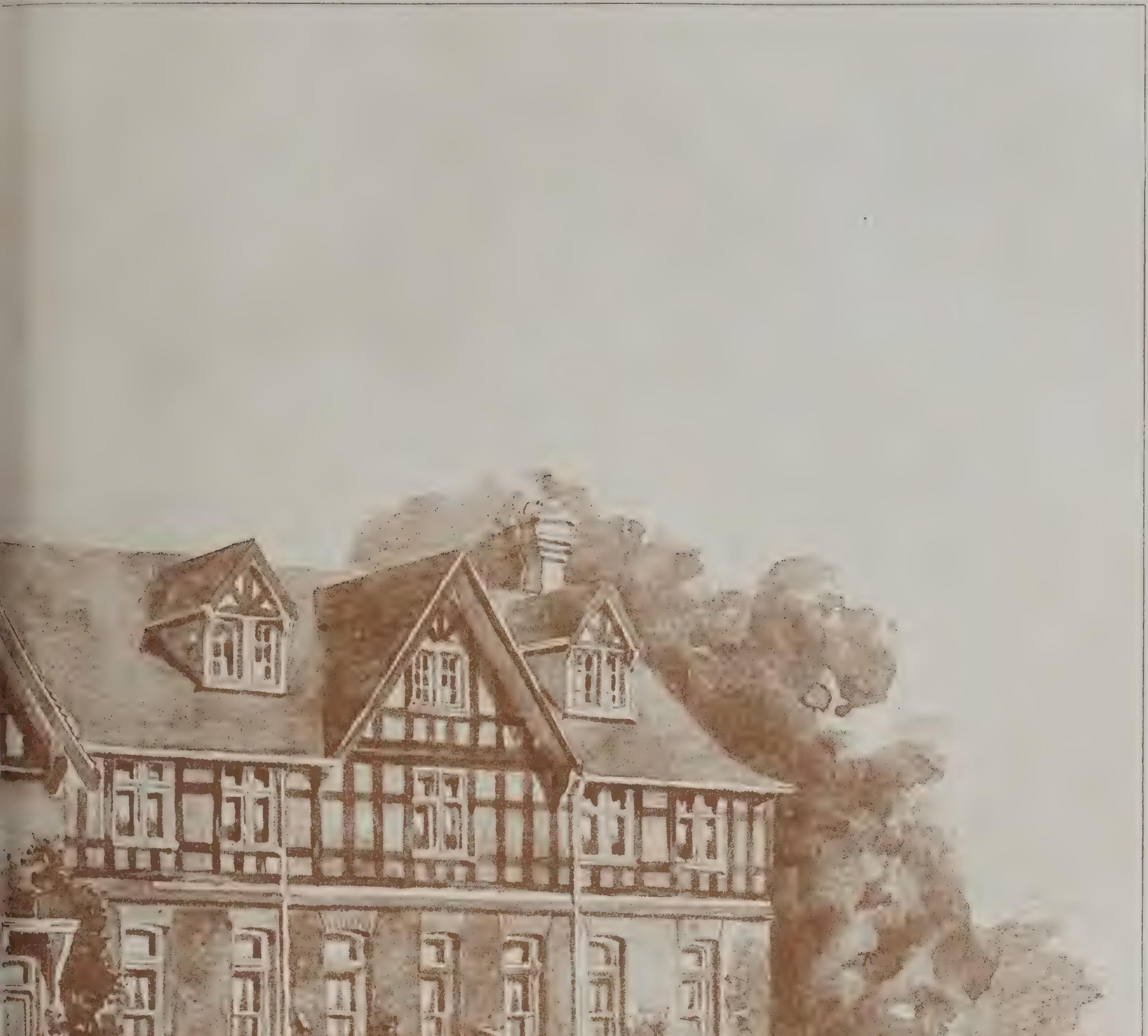

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AVERSHAM-ON-THAMES.

Architect

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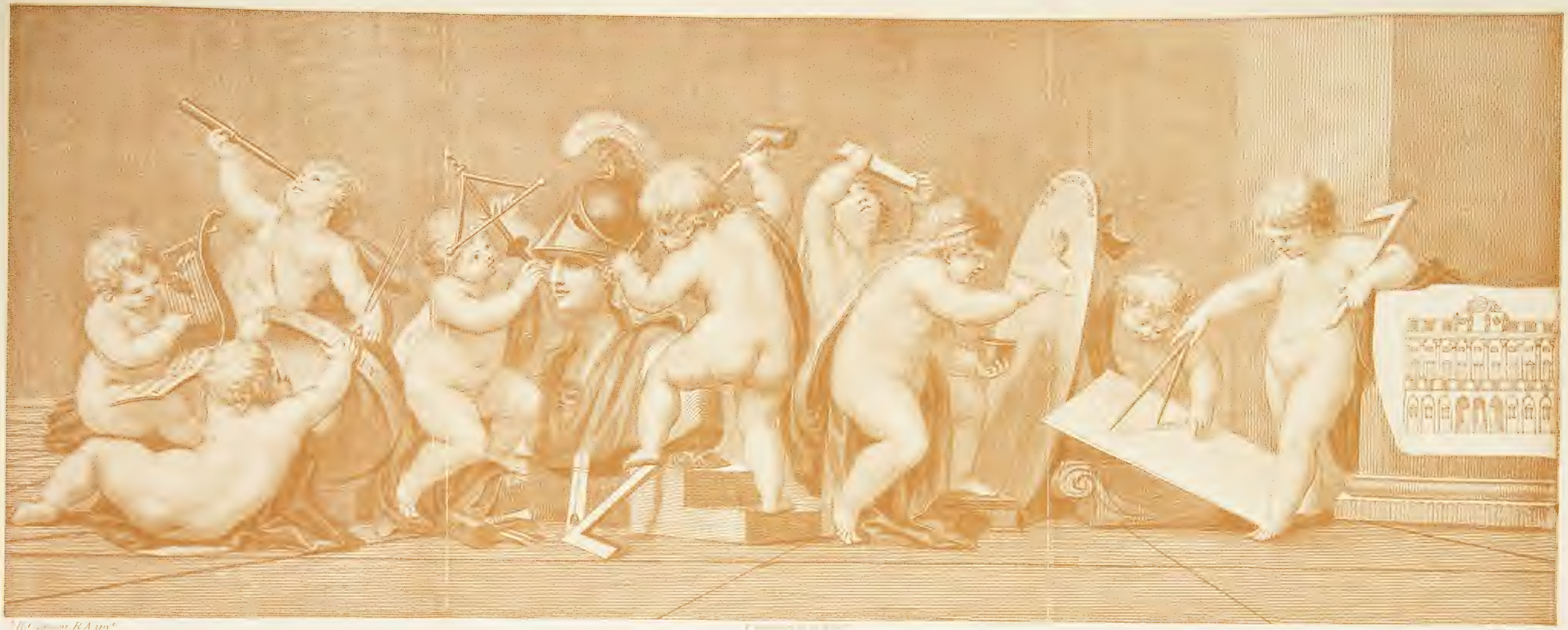

J. B. Cipriani R.A. inv.t

THE FINE ARTS

BY J B CIPRIANI RA

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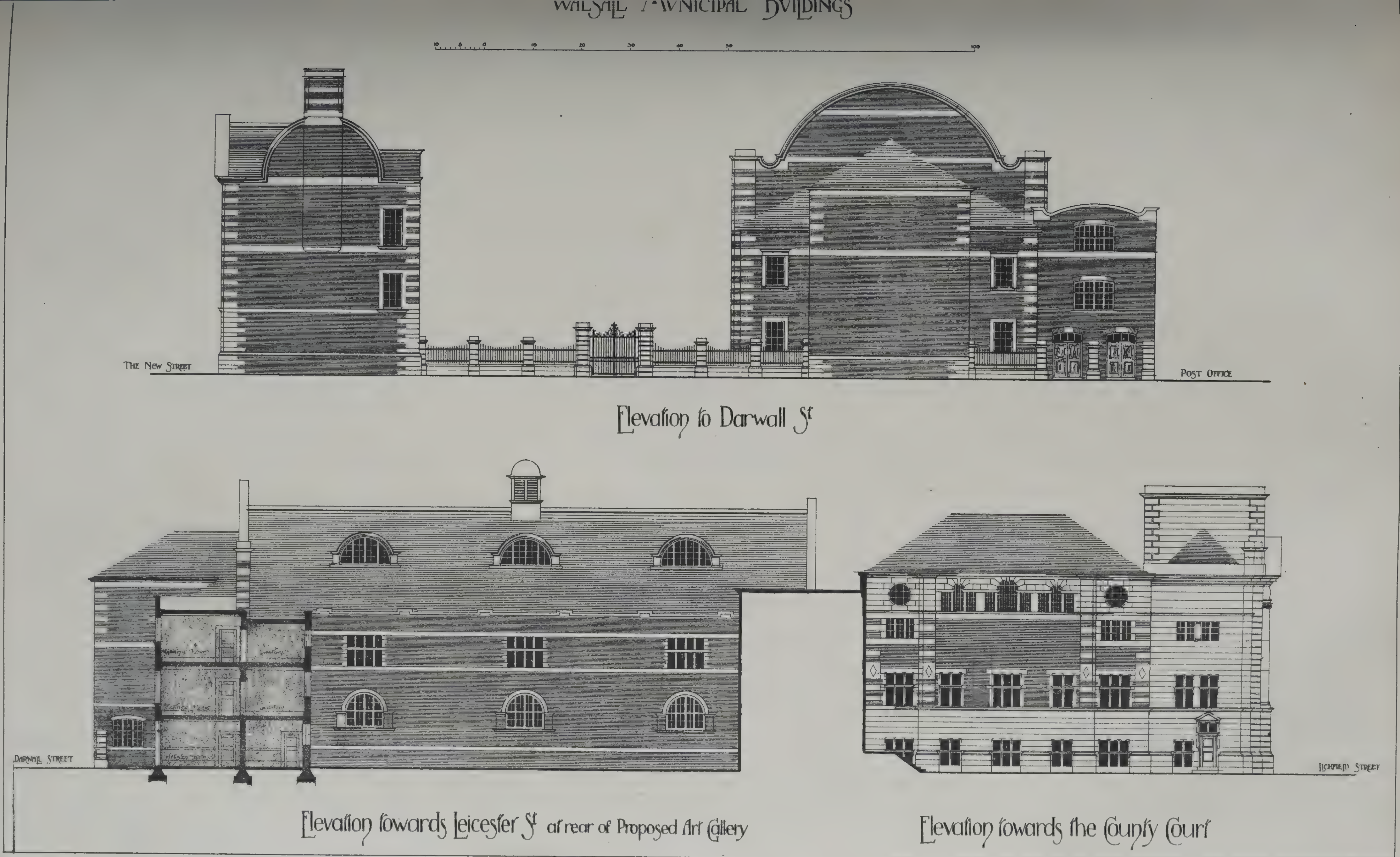
WALSALL MUNICIPAL BUILDINGS
10 0 10 20 30 40 50 100
The New Street
Post Office
Elevation to Darwall St
Darwall Street
Lichfield Street
Elevation towards Leicester St at rear of Proposed Art Gallery
Elevation towards the County Court

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DESIGN FOR THE NEW WALSALL MUNICIPAL BUILDINGS.

By Messrs. CRANFIELD & POTTER.

The Architect.

THE WEEK.

Credit is due to the London County Council for rising above the prejudice which would consider all students of the life and work of a past age as disqualified for dealing with those of men now living. The antiquary is not necessarily a fossil being; on the contrary, the present can have more interest for him than for most so-called practical men, because he is able to realise how far it is a development of a former condition of things. Mr. George Laurence Gomme has rendered various services to archæology, but he has been also statistical officer to the London County Council for seven years, and during the twenty preceding years he has been in the service of the Council and the Metropolitan Board of Works. He was therefore justified in appearing as a candidate for the influential office of clerk to the County Council, and his adoption from among eighty applicants is a testimony to the value of his work during nearly thirty years in Spring Gardens.

There are so many systems of technical education in operation, we cannot expect all of them to be efficacious. It is, however, not too much to expect that students should be sufficiently taught to enable them to understand whether they are possessed of enough skill to undergo an examination in the practical work of so important a trade as plumbing. The country is now overspread with technological centres, and plumbing appears to be a favourite subject with most of them, but, according to the last report of the Examination Department of the City and Guilds of London Institute, the character of the training received by the students is almost appalling. One centre sent seventeen "practical candidates," and they all failed. A second centre sent eleven, a third seven, a fourth five, and among all there was not one who passed. Where a few passed the results were almost as remarkable. Six centres sent eighty-seven candidates, and out of that number there were seventy-two failures. The character of the teaching received is hinted at in the statement of the examiners that students who "have a fair knowledge of the science and other subjects connected with the trade are found under the practical examination to be complete failures as workmen." When we remember how large is the expenditure on what is called "technical education," and how unsatisfactory are the results to be obtained, it is evident that the country requires a Minister of Education who will "stand no nonsense" equally with an energetic Minister of War.

A Workmen's Compensation Act is in force in Canada, but the judges would appear to be sceptical about the necessity of omniscience or the eyes of Argus with builders' foremen. In a case which was lately tried in Ontario a carpenter claimed compensation for injuries sustained by him in falling 30 feet, through the failure of scaffolding. The scaffold in question was of the simplest, for it merely consisted of a 16-feet plank, resting at one end on a trestle and at the other on a stay formed of a plank nailed to two posts, which formed part of the main building. The stay plank was 2 inches thick, and was fastened by spikes. On the day before the accident two of the workmen, without any orders and for their own convenience, raised the stay and refastened it by nails, but less securely than it was originally. It gave way when the carpenter and his companion stood on the plank or scaffolding, and the carpenter received the injuries for which he sought compensation. The jury found that the foreman was negligent because he did not notice there was a slight change in the position of the stay, and the damages were assessed at 500 dols. The judge reserved his decision. When he gave it he said the foreman had no reason to suppose that any change had been made in the stay, for he had a right to assume that the stay had not been tampered with, and was in the condition of security in which it was placed under his directions; there was nothing in the mere difference in the height of the two ends of the plank to indicate that there had been a change. The difference caused no comment on the part of the plaintiff, who was present and saw the plank placed in position, and who mounted on it to commence work. If it could be held that there was negligence on the part of the foreman upon the facts disclosed, it would cast a responsibility on employers never contemplated by the Act. The action was accordingly dismissed with costs.

Municipal authorities when they open exhibitions of modern pictures have to accept the same responsibilities as picture dealers who display such works in their shops. A case has just occurred at Brighton which exemplifies the risks incurred. In one of the late exhibitions in the Municipal Gallery was a work described as a "water-colour drawing," the subject being *Mushroom Gatherers*. A visitor purchased it for 30*l.*, and was surprised to find it was not a water-colour but a pastel. On his application the money paid was returned. The library and museum committee next decided to purchase the drawing for 20*l.*, in order to add it to the permanent collection. The mistake arose from one of the officials failing to indicate the character of the work. The loss is trifling in this particular case, but the Corporation apparently have no experts on their staff, and an error of description might involve them in liability for a much larger sum. The transaction also throws light on the haphazard way of forming the permanent collection. The *Mushroom Gatherers* may or may not be worthy of a public gallery, but it is apparent the committee would not have selected it, and as the drawing has been thrown on their hands the Municipal Gallery serves instead of a pantechnicon. If the reputation of Brighton for good taste is to be upheld a more systematic procedure will have to be adopted in selecting pictures.

Everyone who is acquainted with the artistic wealth of the Chiesa dei Frari in Venice will not be surprised to learn that a fresco which is attributed to Giovanni Bellini has been discovered on one of the walls. It will be remembered that Titian's masterpiece, *The Assumption*, was long concealed in the same church, and that Cicognara was able to gain possession of it by offering a modern picture in exchange. Titian is supposed to have been buried in the Frari, but there is much uncertainty on the subject. It is also said that a statue of St. Jerome near one of the altars is a portrait of the great painter. The monuments of many of the Venetian worthies are to be found in the Frari, including the Doges Dandelo and Francesco Foscari. It was near the tomb of Jacopo Marcello, which bears a long inscription by Marco Zeno, that the fresco was revealed. Many famous artists co-operated in the adornment of the building. A statue of St. John the Baptist was sculptured by Sansovino when he was near his eightieth year, and at the time when he was engaged on the colossal figures of Mars and Neptune for the giant's staircase.

The style of the late Puvis de Chavannes was so personal it is no wonder there is no general agreement as yet concerning the merits of his decorative works. In the course of the inquiries about the progress of the century, arranged by the Paris *Figaro*, the subject of painting has had to be considered, and in that case it was necessary to demand what was the position of decorative art in connection with the other branches of painting. The venerable M. Hébert, who is in his eighty-third year, and who for many years was director at the Villa Medicis, could not fail to be an enthusiast for the style of the great Italians whose works in the days when M. Hébert won the Prix de Rome were supposed to be the *ne plus ultra* of painting. Having that standard in his mind, we need not wonder when he declares that Puvis de Chavannes was not a master. The test he applies is simple. Suppose, he says by some earthquake or bombardment the Vatican was destroyed, and afterwards in the dust a fragment of one of the frescoes was discovered, it would be, he says, a *chef-d'œuvre* of execution. Men would recognise its value by enclosing it in a frame of gold and precious stones. But could anybody expect as much of a fragment of any of Puvis de Chavannes's wall-paintings? M. Albert Besnard, as a representative of the modern school, is more sympathetic, and declares that Puvis de Chavannes has given the highest lesson on decorative art in our age.

THE STRAND IMPROVEMENT DESIGNS.

IT is often an advantage when about to read a book to work out the subject in one's own way, for then we are able to realise the originality and, it may be, the superiority of the author. Before examining the eight designs for the new buildings which are to be erected in the Strand and in the contemplated crescent behind that thoroughfare, a preliminary exercise of a similar kind will help the judgment. For even architects who have had much experience in competition must allow the case is peculiar. Generally, when entering on these contests, the amount to be expended is either defined or can be guessed. But as the London County Council have not announced any financial conditions the competition therefore resembles those in which students of the Ecole des Beaux-Arts have to take part, and is more academic than real. That conclusion is also confirmed by the unusual circumstance of the absence of any guarantee by which the author of the most successful design can expect to realise one of the numerous structures his pencil has created. A further condition of unreality is afforded when it is found that not one plan of a building is required. What the Council seek are two or three long façades and no more.

The scenic character of the enterprise is, however, most emphasised when we can discover no official indication of the accommodation which the new buildings should provide. The architectural designer must for the occasion become an estate agent or surveyor, and prepare what is equivalent to a report upon the class of buildings which he considers will be most in demand in an unique district. Although the Strand is remarkable for the variety of its shops, is it to be supposed they are insufficient in number, and can the whole or the greater part of the ground plan of the new buildings be arranged as a series of shops? There is no staple trade or business in the district: but would it be wise to assume that parts of the upper floors will also be used for commercial purposes in which abundant light is required, and should provision be accordingly made to have larger windows than would be called for in buildings occupied as flats, chambers, or as offices? Many questions of a like kind must arise before anyone who considers the conditions of the case, and are enough to demonstrate that the problem was one of the most complicated ever undertaken by London architects.

Considering the gravity of the issues—for if the new thoroughfare can be made an architectural success without involving the Metropolis or individuals in financial loss, the future architecture of London must assume a higher character—it is to be regretted that so much flippant criticism about the designs has appeared in many daily papers. As perspective drawings were prohibited, the walls of the room of the Water-Colour Society when hung with elevations without any aid from colour no doubt appeared cheerless to those who were accustomed to see there the fine works of the members. But the change and the disappointment did not warrant so general a condemnation of the efforts of the competitors. What appeared to be monotonous was to an expert a proof of the care taken to impart definiteness to an indefinite proposition. The style was prescribed as Palladian, and with one exception the forms employed can be accepted as Italian. But there was no effort to erect a street of palaces which should surpass any seen in an Italian town. If considered from the middle of the room on one of the dark days of this week the drawings seemed to be surprisingly alike. The long line of cornice, the square windows filled in with black, the semicircular arched openings on the ground floor—for most of the shops were arranged in that way—the occasional columns and pilasters running through two or more storeys, the introduction of cupolas to add emphasis and other features which appeared to be in common, were evidence that nearly all the designers had arrived at a like conclusion about the character of the buildings which were required, and, moreover, had reckoned approximately the general cost of the project. It was the similarity which suggested that the designers were practical architects and not academic students, and in consequence a semblance of reality was given to the designs. If the drawings should be manipulated by the Architectural Department of the County Council, by picking out bits here and there in order to make a normal design for the information of those who propose to build on the sites, few incongruities will be found. The details may not always be perfect, for the work had to be hurriedly executed, but there is more unity among the Palladian designs than is usually found in the compositions of an equal number of architects.

The designs have another peculiarity in the absence of any suggestion of Queen ANNE. There is no allegiance to HER MAJESTY in Spring Gardens. The absence of curved gables and other features by which the elasticity of all materials was assumed gives an air of novelty to the collection. No doubt license equal to any claimed by Dutch builders is evident in various parts, but on the whole it has been perceived that Palladianism and freakishness are not fitting companions, and that sobriety is worth having, although its possession brings with it the imputation of dulness.

Having said so much about the aspect of the designs when taken as a whole, we may now consider them separately. Everybody who is likely to read this article must know that the ground to be operated on is, speaking generally, a segment of which the Strand forms the chord, and the arc is a new street or crescent. Near the two angles the segment is crossed by roads leading from the Strand to the street, and one of which on the west side marks the boundary of property consisting of the Gaiety Theatre and Restaurant and "Short's" Stores. The assignment of the corresponding block on the east side has yet to be determined. The first part of the problem is therefore the arranging of the Strand frontage.

No. 17.

The author of No. 17 assumes that what is the most generally frequented street in London, and where so many theatres and restaurants are to be found, is not the place to exhibit the severities of architecture. A French architect would be likely to describe his version of the Palladian style as "solide et léger, plein de goût, d'élégance et de délicatesse." The centre of the frontage is allotted to a public building (no architect ventures to describe it as County Council offices), which is put back from the street line to a sufficient extent to form a block with wings connected by curved lines. The middle part of the block is approached by steps with sculptured groups at the base, and the triangular pediment is also filled with sculpture in relief. The upper line is broken by a couple of towers and cupolas. The building would be a graceful foil to the monumental Somerset House on the opposite side, and it would not rebuke the neighbouring Gaiety block or the corresponding block on the east side which may also be devoted to entertainment. The streets which separate the blocks offered another difficulty to designers. They could be left open like ordinary streets or arched in order to make one group of the three parts. Both arrangements are to be seen. In No. 17 there is a compromise, for ornamental columns are introduced which suggest an architectural connection while avoiding any suggestion of the restaurant being part of the public building. In dealing with these designs it is risky to say that a critic's interpretation necessarily expresses the architect's thoughts, for our conclusions or suppositions can only be taken as inferences from the drawings. The author of No. 17 would appear to have determined that the curved street will be adapted for offices, chambers, residences, &c., rather than for shops. There is much to be said for his view of the future. Accordingly there are fewer shops on his drawings than on the others, and they are introduced with effect in positions by which they serve as contrasts with the rooms beside them. Finance, as we have said, is nowhere entirely neglected, but in No. 17 it is manifest as a controlling factor throughout the design. In a street of chambers we must expect monotony. Here the character of the windows of the storeys above each entrance with their rusticated columns give emphasis and variation. When broken pediments are employed contrary to the examples of PALLADIO there is some excuse for their introduction, since they allow more light to be admitted to the neighbouring windows than if they were continuous.

No. 19.

The author of No. 19 evidently considered it is necessary to have a large open courtyard opposite St. Mary's Church, in connection with the public building. This part would correspond with what is seen at Somerset House, although there would be much difference between the two areas. The entrance to the court would be by seven arched openings from the Strand, surmounted by two storeys and two mezzanines. The centre of the public building would be surmounted by a dome of excellent form. The lower storey is rusticated, and the windows have square heads divided by columns. The design throughout shows a most creditable respect for tradition, and it expresses the repose which characterises all good Italian work. But it is doubtful whether so much sobriety of form would be admired by the mass of ratepayers in a London street of the character of the Strand, and the County Council cannot ignore the power of a multitude of critics whose votes are of more value than their principles. Whoever made No. 19 follow No. 17 must have intended to suggest the difference between two theories of fitness and two modes of dealing with precedents. In the curved street the author of No. 19 shows his belief in the advantage of numerous shops. They have all semicircular heads, which in some, if not all, cases we suppose will light mezzanines. Some have the divisions marked with piers having Ionic capitals. The windows have square, segmental and semicircular heads according to their position. The chimneys are of greater height than those in the remaining designs. Altogether the design is as careful an example of academic treatment as can be expected from a modern architect, but its good qualities will probably be employed as arguments against its adoption.

No. 20.

It is not improbable that some of the designers may have had misgivings about the attractiveness of the proposed curved street, when there is a rival such as the Strand close by. That may explain why the author of No. 20 broke the line of the arc by forming a concave curve in order to obtain space for a national memorial in the form of a fountain. He also assumes that an opera-house will be erected on the space which corresponds with the Gaiety block. The upper part of the public building is marked by a tower and other accessories. The Corinthian Order is carried through two storeys, the entrance is recessed, and generally there is a suggestion of massiveness. In the curved street we have the usual openings with semicircular heads for the shops, and wherever quoins are used they are of large size. Sometimes the windows in the storeys above come so close together that two would appear to be no more than one of unusual height, but with the apprehension of monotony before him as an enemy, a designer should be allowed a good deal of latitude in his fenestration. The rear view of the public buildings in the street shows various low domes which are useful as contrasts.

No. 21.

A builder would be likely to say No. 21 was the cheapest design in the exhibition. What first strikes us on looking at the plan is the number of arched openings along the lines. The end groups are also connected by arches. The uniformity which prevails on the ground level has been influential in other parts, for there is not much sacrifice to gain variety. In the curved street we also see a respect for economy. The author evidently treated the design as if his commission were received from a speculator who sought after profit, and the design will commend itself to men of business; but we doubt whether the works committee of the Council would approve of arrangements which offer so little prospect of contingencies.

No. 23.

The entrances to the Strand front of the central block of the public building shown on No. 23 are approached by steps at the sides, an arrangement which was not uncommon in English mansions which were Italian in style, although not at present in much favour. The building is of two storeys with a single order of coupled columns. There is a triangular pediment filled with sculpture. The end blocks are connected with the public building and resemble it in treatment. The offices of the *Morning Post* have obtained much attention, although the introduction of the figure of Henry VIII. does not seem relevant, especially in connection with the graceful chimeras which occupy some of the spandrels of the windows. The shops in the curved street show rather flat arches in the windows, and the upper storeys on the north side are arranged to form a unified group rather than a series which might be extended indefinitely.

No. 26.

As in No. 20, the arc of the segment is broken by the designer of No. 26, but it is not for the purpose of finding space for a memorial. In No. 26 the main entrance to the public building is found in that position, and as the part facing the Strand may be considered the rear, it is treated with simplicity. The frontage, or, to be more accurate, the rearward part, appears to be close to the line of the pavement of the Strand, and there is only one square-headed doorway. The arrangement was evidently inspired by a desire to utilise all the ground, and a larger part of the Strand frontage is turned to account for business purposes than was considered necessary by the majority of competitors. If the County Council offices were disposed as is suggested they would form an object-lesson in the saving of land. The streets severing the central part from the side blocks are arched over, and the chord of the segment is therefore fully occupied. The public building, if hemmed in by business premises, is dignified, it is surmounted by a dome, and the introduction of a screen is effective. No. 26, in a word, minimises the objections of those who consider the ground in the Strand is too costly for a municipal building. In the curved street we see one of the streets that debouch on it from the north is arched over, as in the Strand. The lower part of the buildings is mainly devoted to shops with arched heads. There are three storeys of rooms and two rows of attics Sculpture is occasionally introduced, but with discretion. No. 26 is one of the designs which compels attention, and it will repay examination.

No. 27.

If the condition about Palladian designs were strictly enforced No. 27 would have to be excluded. It is the exception to which we referred above, for the inspiration was derived from French châteaux. But the majority of architects who visit the Gallery will admire the daring which has created a pleasing variation from so many Italian compositions. If a private speculator possessed the ground he would be likely to give No. 27 the preference. There is no use in concealing the fact that the curved street would have a better chance of becoming a profitable enterprise if it consisted of buildings which were novel. Although we have an abundance of styles displayed in London streets, examples of Early French Renaissance are few. If No. 27 were carried out in its entirety, would not the very piquancy of the innovation compel approval? There are no sacrifices of convenience in realising the style. The shops would be well lighted and commodious. The public building with its semicircular windows on ground-floor, its two storeys with broad pilasters and its high roof and attics, would be a welcome change from the ordinary public buildings of London.

No. 29.

Was it satire or whim which inspired the author of No. 29 to take a position on a plane south of St. Mary's instead of one on the north side of the church? For with that building blocking the view there can only be a partial view of the Strand frontage of the proposed public offices. The spirit which made the church blot out a part of the design is, however, not confined to one spot. No. 29 is suggestive of unquestioned power, but the author does not do himself sufficient justice. He gives a symmetrical elevation with a long unbroken cornice, for he has not cared to introduce the occasional ornaments which are seen in Barry's buildings at Whitehall. His adherence to square doorways is also perverse. But they are subordinate features in a design which recalls Italian work of a good period, and it is not impossible the author claims to have been more true to Palladio than any of his rivals. The buildings in the crescent are made up of shops and the average number of storeys above.

The eight designs are proofs that labour and judgment were liberally bestowed in the endeavour to meet the County

Council's requirements. More satisfactory results would have been obtained if more precise information had been given. The designs exceed in value the money to be expended on the premiums, and it is doubtful whether any more compensation will be forthcoming in the shape of commissions. The principal difficulty is the realisation of the class of occupants who will desire to establish themselves on the ground. It is possible the County Council possess more or less conclusive information on the subject, and if so, it should have been furnished to the competitors as data to work upon. The competition in this case, from its obscurity, resembled a leap in the dark, and it is satisfactory to find that the architects engaged, viz. Messrs. Reginald Blomfield, W. G. Flockhart, Ernest George & Yeates, H. T. Hare, M. E. Macartney, E. W. Mountford, Ernest Rüntz and Leonard Stokes, have come to ground so safely.

ROAD MAKING AND MAINTENANCE.*

THE Romans were not considered to be inventive, and their roads were so superior to most others constructed by ancient peoples the origin of them was ascribed to the Carthaginians. Owing to the immense trade of the African city it is not impossible that the rulers endeavoured to facilitate communication between themselves and their customers by means of great highways. So far as is known, no other people could be considered as a rival in road making to the Romans. The roads of Greece at the present time are in many places of a rudimentary character, and as the great plains of the East could be traversed without much difficulty, it was not required to construct special highways. Rome could not have held her immense empire without facilities for sending troops, and, having to make roads, it was resolved that the work should not be easily injured. Economy was not much considered. The lines were laid as straight as possible, and where obstacles arose, such as rivers or hills, they were overcome by means of masons and carpenters. In fact, the great lines of communication of the Romans might be considered as works of masonry. Some modern engineers have considered they were too substantial, and that more elasticity would have been an advantage. It is certain that in England the natives were not ambitious to rival the Roman roads that were left in the country. The duty of making and repairing roads was left to the parish authorities. There was no general supervision, and in consequence many parts of the island could be traversed only by enduring great inconvenience. It was not until 1653 that a Turnpike Act was passed, by which people who used roads were obliged by means of tolls to contribute to their maintenance. Rebellion in the old times was in this country a stronger incentive to road making on a large scale than commercial interests. Just as the ancient Romans created ways in order to put down insurrection, however far from Rome, and as the great streets in Paris were formed by Haussmann of a width which would enable cavalry to charge in large masses in times of revolution, so the Highland rebellions of 1715 and 1745 were the causes by which the North of Scotland ceased to be inaccessible from the South. The military roads were so successful they were followed by others, until the time came when, for certain purposes, they were superseded by railways. An article reprinted in last week's *Architect* will suggest how many varieties of roads are to be seen in a limited area. In Ireland a similar experience of the effect of opening out a wilderness was afforded. In the early part of the century there was a region in Munster known as "Pobble O'Keefe's country," which was an immense Alsatia. It was the refuge of malefactors, and the country all round was practically in a continual state of siege owing to their depredations. But under the direction of Richard Griffith, a Welsh engineer who was long associated with Ireland, excellent roads were made right through the outlaws' district. They were scarcely completed before the long-standing evil came to an end. Roads in that instance, as in an earlier time in Scotland, served the same purposes as the modern policeman's lantern, and were as fatal to illegal practices.

The two great road makers of the nineteenth century were Scotsmen, viz. Macadam and Telford. The former, after his appointment as road surveyor in Bristol, began a practice which was the opposite of the Roman. Instead of large stones he used small, for he described his system when he said it was to put broken stones upon a road which shall unite by their own angles so as to form a solid, hard surface. He was indifferent to the use of binding material, for he believed that every road should be made of broken stones, without mixture of earth, clay, chalk or any other matter that will imbibe water and be affected by frost. Whenever a system of construction was successful, people at one time came to the conclusion that there could not be more than one. Accordingly, paved streets and high roads which had cost large sums and were in perfect condition were torn up in order to be replaced by Macadam's small stones. Telford, who was a year younger, had wider experience as an engineer, and his roads came far nearer to the Roman examples than Macadam's. He employed both large and small stones, the contour of the roadway was of elliptical form, and careful provision was made for drainage. Considering the means at command his roads are remarkable works.

The modern road engineer has to execute works of a different character from those of Macadam and Telford, but, on the other hand, he has a greater variety of materials at his disposal, as well as machinery of a kind that could not be imagined a century ago. The rock drills, for example, are so numerous, Mr. Aitken in his excellent book on road making hesitates about describing them, and he confines himself to the "Ingersoll Sergeant," the "Hirant" (Larmuth's), "Schrams" and "Rio Tinto." With their assistance the quarrying of stone is not so dilatory and dangerous a process as that in use twenty or thirty years ago. The difference between the old and new methods of obtaining stone is remarkable. From detailed calculations given by Mr. Aitken of the results on works conducted by himself, it is found that while the cost of quarrying by manual labour ranges from 10*d.* to 1*s.* 6*d.* per ton, the highest price with a steam drill was 7·50*d.* per ton, and in that case the "stripping" cost 2·05*d.* In other cases the price was 5·76*d.* and 6·53*d.* per ton. Stone-breaking by hand is also being superseded by machinery.

The inattention to the condition of roads in this country is revealed when we find that rolling by horse-power was not suggested until 1843. Twenty years afterwards a steam-roller was constructed in Birmingham for use in Calcutta. In 1865 Messrs. Moreland & Sons sent two to Bombay. About the same time Messrs. Aveling & Porter took up roller-making, and since 1867 they have sold over 3,000. Scarifiers are no less necessary as accessories to rollers. Their economy is almost sufficient to recommend them. Mr. Aitken has found that with wages at 4½*d.* an hour hand picking of a road surface costs 1·75*d.* per square yard. With a Rutty's scarifier, after allowing for wear and tear, sharpening, &c., the cost varies from 0·12*d.* to 0·62*d.*, and in towns the highest cost was 1*d.* per square yard. Another machine which will do much for the appearance of our roads is the "paring machine," lately invented by the county road surveyor of Elgin. It can trim the edges of roads for a width of from 6 inches to 30 inches and a depth of from 1 inch to 10 inches; moreover, "it is capable of cutting tree roots of moderate size, rank vegetation, and of penetrating stony ground." The cost of paring by hand-labour is from 2*l.* to 4*l.* per mile; by the machine it is from 7*s.* to 10*s.* If the old methods were still followed it is doubtful how people could pay the cost of maintenance of roads along with so many other heavy burthens, but the reduction of cost which machinery has effected enables a part of the rates to be expended on new objects without any deterioration of roadways.

The second part of Mr. Aitken's book treats of roadways in cities and large towns. The differences are remarkable between the results derived from experience in various places. It was found in London that granite pavement which lasted twenty-four years in Cannon Street could not withstand the traffic in Fleet Street for more than fourteen, In the City a granite sett pavement has an average life of eighteen and a half years. In the Whitechapel district the term is said to be nine years. Wood pavement has also the habit of becoming anomalous in London. In Piccadilly soft wood paving blocks expanded 10 inches, while in Regent Street the expansion was no more than 2 inches. All the other varieties of pavements in general use are described at length. Mr. AITKEN also has a chapter on subways, which, if more generally constructed, would obviate the continual demolition of costly pavements in order to repair gas and water-pipes. The two constructed by the Metropolitan Board of Works in Southwark Street and Garrick Street are not of the utility that was anticipated, owing to the apprehensions of the gas and water companies, who imagine that pipes in a subway become less of an asset when they are placed in property which belongs to the County Council. That is a vain fear, but we may assume it received the sanction of counsel learned in the law.

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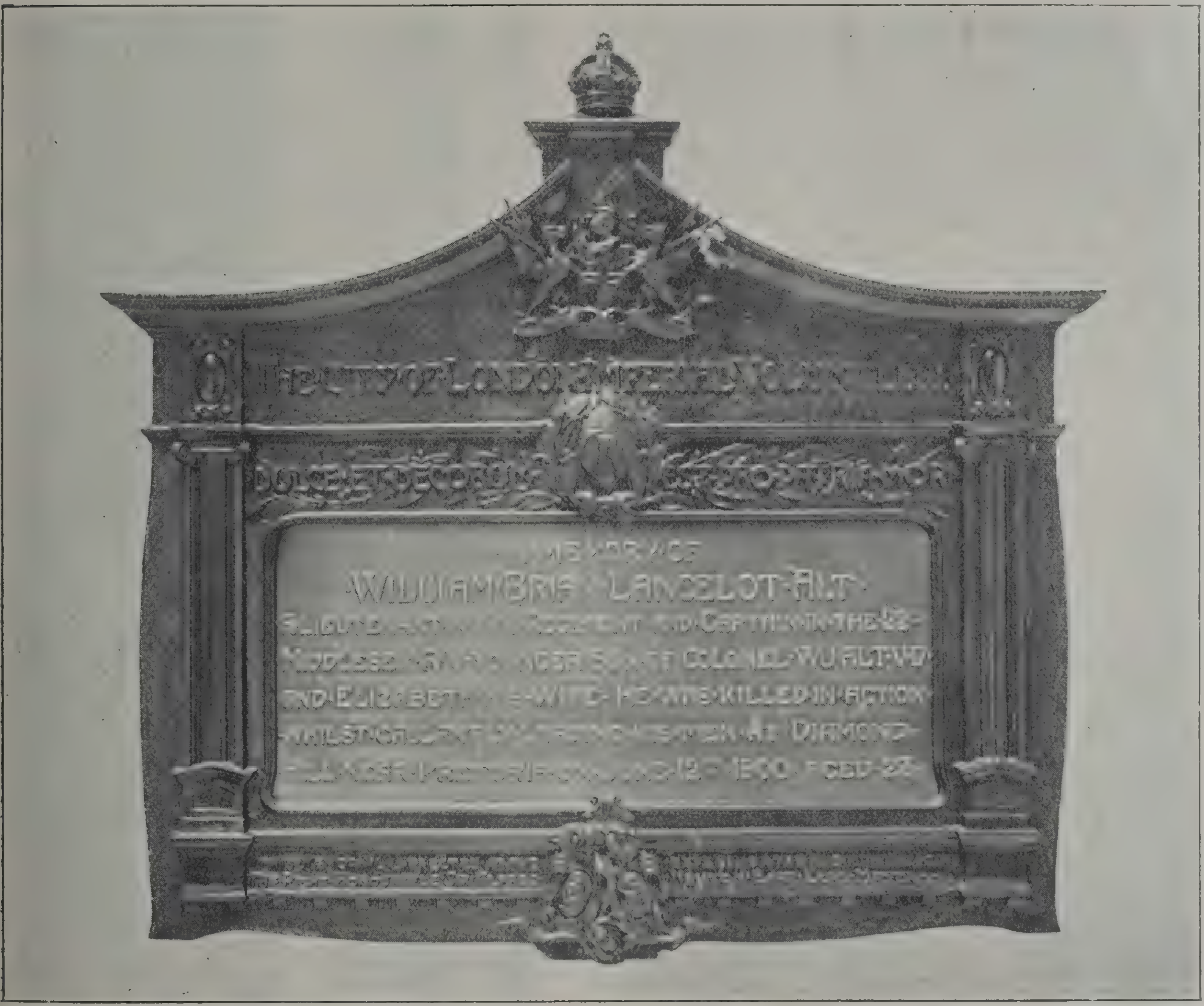
* *Road Making and Maintenance.* A practical treatise for engineers, surveyors and others. By Thomas Aitken, C.E., president of the Road Surveyors' Association of Scotland, &c. London: Charles Griffin & Co., Limited.

On the important subjects of town and country roads Mr. AITKEN's volume will be found to be a valuable addition to books of reference in borough surveyors' offices, and, in fact, its use is manifest to all who are connected with the construction or maintenance of roads or streets. It embodies not only the author's own experience, but that of many other officials. The information has been placed before the reader in a manner which makes reference easy. Indeed, the numerous tables enable an engineer to realise the conclusions of the best authorities at a glance. From its treatment and the vast mass of information in the pages, it becomes a model for engineering treatises, and is a fitting companion to the standard works produced by the publishers in which so many able engineers and men of science co-operated.

IN MEMORIAM: THE FALLEN C.I.V.'S.

WITH the home-coming of the C.I.V.'s the memories of those who have fallen with such ungrudging sacrifice in the South African campaign come up, and many schemes for recording vivid deeds of the brave have been suggested. London has already decided how its citizens shall be reminded in future of the C.I.V.'s. A bronze memorial tablet will be placed in the parish church of each member of this regiment whose life has been given, subject to the approval of the incumbents. The Lord Mayor of London commissioned Mr. FREDERICK WHEELER, F.R.I.B.A., of 6 Staple Inn, London, one of the members of the 20th Middlesex (Artists), to prepare a design, which has been approved and which we illustrate. The whole of the outer portion is of bronze, the inscription being in copper repoussé. The size of the tablet is about 2 feet 9 inches, and our illustration is from a plaster cast. The idea of distributing a simple form of memorial is probably more appropriate than the earlier suggestions in favour of building a big central monument. These tablets are being executed by the Coalbrookdale Company, 141 Queen Victoria Street, E.C.



The Memorial to the late Lord Chief Justice will take the form of a seated or other statue to be placed in the Royal Courts of Justice, and a replica of his portrait painted by Mr. J. Sargent, R.A. In the event of there being any surplus after the cost of these two specified objects has been defrayed, it is to be appropriated to such purpose as shall seem fit to the general committee.

BRITISH SCHOOL AT ATHENS.

THE annual meeting of the subscribers to the British School at Athens was held on Tuesday. Mr. Asquith, M.P., presided.

The managing committee, in the course of their report for the session 1899-1900, said :—Although the number of students had been less than in some previous years, the work of the school, under the direction in Crete of the director of the school, Mr. Hogarth, and in Athens of the assistant-director, Mr. Bosanquet, has been profitably carried on. Of the six students, Mr. J. C. Lawson, now Fellow of Pembroke College, Cambridge, came out for a second session as Craven student ; and Mr. F. B. Welch, of Magdalen College, Oxford, came out for a second session as Craven Fellow. The four new students were Mr. J. H. Hopkinson, of University College, Oxford, who came out with a Craven Fellowship ; Mr. S. C. Kaines-Smith, of Magdalene College, Cambridge, who held the Cambridge studentship offered by the managing committee ; Miss O. C. Köhler, of Girton College, Cambridge, and Mr. D. Theodore Fyfe, who was appointed by the committee to the architectural studentship. Mr. Lawson continued to devote his attention to the folk-lore and traditional beliefs of the Greek people. Mr. Welch, after completing in Athens his work on the minor antiquities found at Phylakopi, went in February to Crete with Mr. Arthur Evans, worked in the museum at Candia and travelled in the interior. Later he was called to Palestine to report on the Ægean pottery found in the excavations of the Palestine Exploration Fund, and practically established the fact that not only Cypriote but genuine Mycenæan vases were freely imported by the cities of the Philistine seaboard. Mr. Hopkinson devoted his attention mainly to the history of vase-painting, but from February travelled in the interior and in the islands. Mr. Kaines-Smith and Miss Köhler worked chiefly in Athens. Mr. Kaines-Smith, after working at the relationship between certain types of engraved gems and the grave-stelae, made various expeditions in Greece with members of the British and American schools. Mr. Fyfe has done admirable work in Crete, where he not only made the plans and surveys which lay within his special province, but also showed marked artistic talent in his water-colour drawings of the frescoes found by Mr. Evans.

The only excavations undertaken by the school this session were those in Crete. Mr. Hogarth has worked with great success on the site of the town of Knossos, and later in the cave at Psychro which has been hitherto identified, as it now appears with reason, with the far-famed Dictaean cave. At Knossos, although a careful and systematic probing of the whole surface of the hill did not, as Mr. Hogarth anticipated, reveal the earliest cemeteries, yet the discoveries made were such as to justify amply the labour and expense of the undertaking. A series of primitive houses were found to contain masses of pre-Mycenæan and Mycenæan pottery. Many of the vases of the ware known as "Kamaraes" were unique in shape and ornament, and represent a great advance on previous knowledge. Further evidence of the existence of Pillar worship in the period of Mycenæan culture was also forthcoming. Good Mycenæan painted vases and objects in bronze were found in some of the chambers, and later two unrifled graves in a cemetery of late Mycenæan and Early Geometric period yielded many vases as well as objects in gold, bronze, iron and paste, unlike anything previously found. The excavation of the Dictaean cave in May was rewarded by remarkable discoveries. Not only was there in the upper part of the cave abundant evidence of its sacrificial use, in the form of votive objects ranging from the late Kamaraes epoch to the later Geometric, but in the lowest depths of the cavern, where a subterranean pool extends among stalactite formations, the water-borne earth was found to be full of bronze statuettes, implements, weapons, gems and articles of personal adornment, while even the natural niches in the stalactite formations were in many cases stocked with votive axes, blades, needles and so forth. "The frequent occurrence of the double Carian axe," writes Mr. Hogarth, "proves that we have here to do with the Cretan Zeus of the Labrys and no question remains that in the altar and temenos, the votive niches, the 700 bronze objects, the multitude of vases (nearly 600 unused cups of one type alone were found), the libation tables in stone, the implements in bone and iron, we have abundant evidence as to the cult practised in one of the earliest and most holy of Cretan sanctuaries." A full preliminary account of these excavations will be published in the School Annual. The work will be continued in the coming session. A passing reference must be made here to the brilliant discoveries made at the same time by Mr. Arthur Evans, working with the aid of the Cretan Exploration Fund, on another part of the site of Knossos, where he was fortunate enough to light upon the remains of a great prehistoric palace which it does not seem fanciful to connect with the name of Minos. The most remarkable finds were a series of wall-paintings which are practically unique in the history of early Ægean art, and
upwards of 1,000 inscribed tablets, in various forms
partly hieroglyphic and partly in signs of an a
character, which form a most important addition to
previously found by Mr. Evans in other parts of the is
cannot fail, when they have been properly studied,
welcome light upon the early history of writing In
Mr. Evans has been assisted by a former student, Mr
Mackenzie, as well as by the school architect, Mr. Fyf

Mr. W. H. Cooke, the surviving executor of the
George Finlay, presented to the school the library a
shelves, together with various antiquities and
collected by Mr. Finlay during his long residence i
The collection has been placed by itself in one of the
the Macmillan Hostel, and forms a most valuable a
the books available for students. As might be exp
library is particularly rich in books dealing with
history and literature.

The monograph on St. Luke's Monastery at
Phocis, which represents the first instalment of the
studies on Byzantine architecture in Greece made so
ago by two students of the school, Mr. R. W. Schult
Sidney Barnsley, will shortly be published by Mess
millan & Co. The cost of the plates has been
generous contribution from one of the trustees of th
Dr. Edwin Freshfield. In this connection it is only
mention the serious loss sustained by the school gene
by the Byzantine side of its work in particular, thr
recent death of the Marquis of Bute, who more t
made liberal contributions to the Byzantine Architect

Mr. Hogarth, who was appointed director of the
1897 for a period of three years now retires from
the committee take this opportunity of expressing th
tude for the zeal and energy he has shown in ful
duties of his office, particularly in the department o
tion, for which he was so well qualified by previous e
He has completed the work at Phylakopi in Melos, in
his predecessor, Mr. Cecil Smith, and has also condu
cessful excavations on the site of Naucratis, and, as ha
been stated in this report, on two sites in the island
Mr. R. Carr Bosanquet has now been appointed direc
valued hon. secretary of the school, Mr. William Lo
has done such splendid service since his appointme
left the country with one of the Scottish companies o
Yeomanry. Fortunately, the former hon. secret
Macmillan, was able to resume his old post temporar
Mr. Loring's absence. Mr. Pandeli Ralli, a gener
factor of the school in its early days, has resigned hi
as trustee.

In last year's report reference was made to a p
establishing a British school at Rome. Considerabl
was made in drafting a scheme for the school at Rom
attempt was made privately to raise funds to enabl
started this autumn on however small a scale, but
has met with only limited success. In spite of this di
ment, a very competent director has been pro
appointed in the person of Mr. Gordon Rushforth,
College, Oxford, who knows Rome thoroughly and h
expert knowledge alike in the field of Latin epigrap
Italian art.

The finances of the school have been a source of
able anxiety to the committee during the past year, an
a sense of great relief that they find themselves able
favourable report. At the time of the public meeting at S
Palace in 1895, subscriptions amounting to a very co
amount were promised for a period of five years, and th
ment grant of 500*l.* per annum was promised at the s
for the same period. Thus the committee were
depend on the continuance of about half their incom
the present year. Happily nearly all the expiring
tions have been renewed for two years certain. Am
renewals the committee have special pleasure and
recording that of 25*l.* per annum generously given s
by H.R.H. the Prince of Wales. Dr. Ludwig Mond
tinued in like manner his most liberal subscription of
annum, which forms no inconsiderable proportion of
income of the school. At the same time a mem
addressed to the Chancellor of the Exchequer asking
for a renewal of the Government grant. This,
favourably received, and the committee have been
informed that the grant will be placed upon the Est
a further period of five years.

Among special donations for which the warmest
the committee are due, mention must be made of
from the Cretan Exploration Fund, which in vari
amounted to at least 150*l.* more than the 100*l.* formally
in the accounts, and also of 50*l.* given for general
by Newnham College, Cambridge. It is specially fort
the finances of the school should for the moment
paratively prosperous, for the committee regret to say
have been called upon to face a somewhat serious e
the repair of the school building. As it has now been

for some sixteen years this is hardly to be wondered at although the defects which have been discovered in the roof, and which cannot be satisfactorily cured without its entire reconstruction, would not have occurred if the architect's plans has been properly carried out by the original builders. The matter has been thoroughly inquired into by a sub-committee consisting of Mr. Penrose, the original architect, the treasurer, the acting hon. secretary, and Mr. C. R. Clark, formerly school architect, with the advice of the present school architect, Mr. Fyfe, who has further undertaken the very necessary supervision of the work in progress.

In conclusion, the committee feel that they may congratulate subscribers both on the present position and on the future prospects of the school. In the fifteen years which have now elapsed since its foundation it has, in spite of difficulties and discouragements, steadily gained ground. In the field of excavation, which forms so useful an adjunct to the work done in museums or in the lecture-room, the results of the past session seem to promise discoveries in Crete which may even surpass in interest those already put to the credit of the school in Athens, in Cyprus, in Melos and in Naucratis. The relations of the school with the other foreign institutes in Athens continue to be of the most cordial character. If only the financial support hitherto forthcoming both from public and private sources is well maintained, its friends may hope that in the new century upon which we are so soon to enter the British school at Athens may, with its sister school at Rome, before long achieve the position of a permanent national institution, to which its promoters have always looked forward with unfailing confidence.

The Chairman moved the adoption of the report. One announcement would have caused as much surprise as an unexpected archæological find, and that was the gratifying announcement that the Government grant of 500*l.* was to be renewed. Since the publication, nearly a century and a half ago, of Lessing's "Laokoon," archæology had always been an integral part of classical learning. But until recently it was considered the province—the unenvied province—of a few specialists. Open research of many different kinds must be conducted in co-operation, in the catholic spirit in which the labours of the British school were carried on, if the full intellectual wealth of antiquity was to be realised and appropriated. But the golden days when national collections were enriched with the spoils of antiquity had gone, never to return, and the explorer could no longer rely on an adjacent battleship. A humbler and more apologetic mood of necessity characterised the modern excavator; the local authorities must be conciliated and compensation paid for disturbance. The best work apparently of the year had been done in the island of Crete—the mythical, as was thought, but now, it would appear, the historic home of Minos and of a population given to mendacity. Scepticism had received an ugly blow, and Zeus's mountain and Minos's Palace of Jurisprudence, as well as the Labyrinth itself, or even the skeleton of the Minotaur, might be disclosed in a year or two. But this was not, he feared, desipere in loco, as the subject was a serious one. The zeal of successive directors, the skill and assiduity of explorers, the continuous infusion of the best blood of each academic generation, were matters upon which the British school had cause to congratulate itself and were worthy of all admiration.

Dr. R. L. Cust seconded the resolution, which was heartily carried.

Mr. D. G. Hogarth, the retiring director, then gave an account of his season's labours. He said his work had been for the past season solely to conduct the excavations of the school. The audience would recall his prophecy of last year concerning Crete. It had been fulfilled beyond any hope he had held then. What had been effected by the Cretan Fund and the school, working together, amounted to a revelation of the prehistoric Ægean civilisation, more momentous than any since Schliemann opened the royal graves at Mycenæ. The discovery made twenty-five years ago that no barbarians but possessors of a very high and individual culture preceded the Hellenic period in Greece—a culture which could not but have affected the Hellenic—had been developed in various ways since. It had been established that this culture had a very long existence and development; it covered completely a large geographical area; it developed various local characteristics in art production which seemed to be gathered again into one by the typical art of Mycenæ. But the most historical points remained obscure. Where was the original home of this new civilisation; what family did the race or races belong to; of what speech were they and what religions; what was the history of their societies and art during their dominance, and what became of them after? Neither mainland Greece nor the Ægean islands answered these. But there were two unknown quantities, Greece and Asia Minor, with Rhodes. One of these we have now attacked. Crete by its great size and natural wealth, its position and its mythologic fame was bound to inform us of much. It is too early to say that the questions will all be answered by Crete, but already we have much light. The discovery of written documents and of shrines has told us more than any other evidence of the origin and family. The Knossos frescoes show us the racial type; the Dictaean, Cave and Knossos houses illuminate the religion. New arts have been discovered, and the relations to Egypt and Asia are already far better understood. It remains now to find the early tombs, and clear the lower stratum of the palace ruins at Knossos, to know more of the earliest Cretan race, to explore the east or "Eteocretan" end of the island, to obtain light on the language and relations to Egypt and Asia, and to investigate the "Geometric" period, which is the transition to the Hellenic. The school is in an excellent position. In regard to British interest in Greek art and archæology, it must regard itself as in some sort a missionary centre. Until there is more interest there will not be sufficient inducement to students. So far as research goes, the school has extorted recognition all over the scholarly world, and now occupies a leading place, in which public support must maintain it.

The officers of the school were then elected, and the proceedings ended with the usual vote of thanks.

PRESERVATION OF LOCAL RECORDS.

A MEETING of the executive council of the County Councils Association has been held at the Guildhall, Westminster, at which Sir J. T. Hibbert presided. The Duke of Northumberland called attention to the report of the committee of the congress of archæological societies on the preservation of local records, and it was resolved that the Council agree generally with the principle involved in the recommendations contained in the report, and that the latter be circulated to county councils for the expression of their opinion thereon. The main features of the report are that it is desirable to establish throughout the country local offices, under public control, for the preservation, arrangement and study of documents relating to the history and administration of the district; that the foundation and support of offices can best be entrusted to the county councils; that the work may be entrusted to a standing joint record committee of quarter sessions, the county council, the municipal and other authorities under the presidency of the *Custos Rotulorum*; that well-organised offices in provincial centres are preferable to county offices imperfectly equipped and conducted, and that to render possible the formation of such provincial centres power may be given to counties and county boroughs to combine as may be desirable to form offices in central positions common to two or more counties. It is thought that for the present all documents up to the commencement of the present reign may well be kept, and it is felt that the safe custody of their records and convenience of access will be inducements to owners of documents of antiquarian value, whether general, ecclesiastical, local, or personal in their character, to place the documents in public custody.

RESTORATION OF WATERFORD ABBEY.

VISITORS to Waterford sometimes notice, says the Bishop of Cashel and Waterford, as a rather conspicuous feature in the centre of the city, the ruined tower and chapel of the old Franciscan friary. It is not generally known that the burial-place of Lord Roberts's family is within the walls of this interesting old building, in which also several representatives of Waterford's oldest and most distinguished families sleep their last sleep. It has been suggested that no more fitting tribute could be paid to the Irish soldier than the partial restoration of this very ancient chapel as a mausoleum in which may be recorded, not only the names of Lord Roberts's family already buried there, but those of other Irish soldiers who have fallen in the recent war, including, of course, that of Lord Roberts's son who was killed at the battle of Colenso.

A provisional committee has been formed from the leading citizens of Waterford, including the mayor and some members of the corporation, for the purpose of taking steps for carrying out this project, and Sir Thomas Drew, of Dublin, has been asked to prepare plans and specifications. As soon as his report has been received a representative committee will be formed for receiving subscriptions and carrying out the work.

The restored building will not be used for religious services, except in connection with funerals, and the entire scheme is intended to be non-political and unsectarian. Lord Roberts, who has been written to on the subject, expresses his "thorough approval," and sends his best thanks to those who have thought of him in connection with the measure.

Busts of Allan Ramsay, the poet, and William Burns, author of a history of the Scottish War of Independence, by Mr. D. W. Stevenson, R.S.A., have been placed in the "Hall of Heroes" Wallace Memorial at Stirling.

NOTES AND COMMENTS.

ARCHITECTURE and building, with the various subsidiary trades, have been duly represented in the records of the Imperial City Volunteer Regiment, whose return to London has been the most important event of the week. Among the officers were three architects. In the ranks were thirteen architects, draughtsmen, the same number of bricklayers, thirty-two builders and decorators, eighty-six carpenters, five electricians, nine joiners, one mosaic worker, thirty-nine painters and paperhangers, six plasterers, twenty-six plumbers, seven surveyors, six stonemasons and two slaters. There may be other volunteers who are less directly connected with buildings. The statistics are remarkable as evidence of patriotism, for it should be remembered that uncertainty of employment was not the primary cause which compelled the representatives of building to take part in the South African war, for at no time was there a greater demand for skilled labour than in the beginning of the present year.

WHEN NAPOLEON instituted the Legion of Honour it was with the intention of levelling the differences which birth or wealth made amongst Frenchmen, and he wished to have the highest and the lowest pride themselves on the privilege of belonging to an order which in one sense was to be considered the most exalted in Europe. On the numerous occasions when he took the cross and ribbon from his own breast to pin them on the uniform of a soldier or a drummer, he demonstrated the relationship which he had created between individual men. By one of those strange freaks of interpretation which sometimes arise, M. LOUBET, the president of the French Republic, having been accustomed to deal with men in the abstract as if they were only ciphers which could be manipulated in election returns and voting lists, has ignored that individuality which it is the business of the Legion of Honour to foster. By conferring the Cross on Paris and other places he has annulled the spirit of the order. An act of the kind must bring about several evil results. One is the upsetting of the ancient laws of heraldry. The municipal authorities are compelled to flatter M. LOUBET, if only to make compensation for the project of giving a banquet in defiance of him, and it has therefore been resolved to introduce the ribbon and cross into the arms of the city of Paris. The laws of heraldry have been ignored since 1848, and innovations have been introduced which are enough to make an ancient pursuivant stand aghast. It is now actually proposed to remove the old device "Fluctuat nec mergitur" from below the shield on which ship and sea are emblazoned and to place the motto over the shield. That will leave space for branches of oak and laurel, from which the riband of the legion of honour will be suspended with its cross. Parisians, we suppose, will be proud of the incongruity, and many cities in France may covet a similar example of the new heraldry. But we hope nobody in authority in this country will seek to make the arms of London ridiculous by conferring a K.C.B.-ship on the City as a reward for services in connection with the African war.

THE difficulty of obtaining definitions of technical terms which will be precise and generally acceptable will be evident to all who can give a little attention to the subject. One of the late parliamentary commissions found it necessary to prepare a short dictionary of technicalities, in order that the evidence of witnesses relating to various industries might become more clear to the members and students of Blue Books. It is not long since an American writer on sanitation declared that in American dictionaries, which are very numerous and large, no distinction was drawn between the two words "supervision" and "superintendence." The lax way of using the words was inconvenient to architects, for while they were prepared to supervise their work, they could not guarantee that constant superintendence which is expected from a clerk of works. If we cannot insure precision with English lexicographers—and it is well to remember Dr. JOHNSON declined responsibility for definitions of technical terms—it is much more difficult to arrange correspondence in foreign equivalents. The Society of German Engineers have been in correspondence with the Institution of Mechanical Engineers on the subject. It is sought to obtain the co-operation of the German, English and French societies in order to prepare a trustworthy technical dictionary in the three languages. As was to be expected, the Council of the Institution will be prepared to give aid to the work. But "the Institution as a body cannot be committed to the undertaking of the responsibility." It was also proposed that the scheme should be enlarged by the introduction of Italian terms. A work of the kind proposed is needed, for owing to the influence of trade and commerce, communications in the four languages mentioned are constantly necessary, and the ordinary translator or interpreter does not profess to be well up in technicalities.

IT needs courage in an architect to arrange a plan of wall-decoration in which views of buildings will be the main elements. M. RÉNOT, the architect of the Sorbonne, has decided to have the two vestibules of the Faculties of Science and Letters in the new building adorned in that manner. He has given the commission to M. THÉOPHILE POILPOT. There will be ten views representing the history of architecture; the Temple of Philæ will be the type of Egyptian art, the Acropolis of Athens will stand for Greece. The fortifications of Carcassone will be suggestive of Gallic Romanesque, San Sophia will represent the Byzantine period, the Alhambra the Moorish period, Notre-Dame de Paris will appear for Gothic, some of the Venetian buildings will typify Italian Renaissance. The Château de Chénonceaux will suggest the picturesqueness of French Renaissance, and the Place Royale in Paris will close the series as a work of the time of LOUIS XIII. It is expected the new wall-paintings will be completed before the close of the coming year.

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: NORTH CHOIR AISLE SHOWING ENTRANCE TO CHAPTER-HOUSE.

ALTERATIONS AND ADDITIONS TO THE GRANVILLE HOTEL, RAMSGATE.

THE original frontage above the ground floor level of the existing buildings forming the hotel has been very slightly altered except for the addition of balconies to the various rooms on the sea front. The ground floor rooms have been entirely remodelled by converting what were originally separate houses with entrances from the street, passages and staircases, into four large public rooms, with a central hall overlooking the sea. Externally a covered verandah has been built running the whole length of the sea front. Considerable additions were made in the number of bedrooms at the east side of the hotel, but these with the other exterior works do not really obliterate the original outline of the building. Internally everything is altered. Instead of narrow passages and small staircases, there are now wide corridors and one grand staircase with hydraulic lift, giving easy access to every part of the hotel. The basement has been entirely remodelled. The builder was Mr. W. J. ADCOCK, of Dover, and the sanitary engineers Messrs. GEORGE JENNINGS, Limited, of London. Carving by Mr. MABEY. The architect for the new works was Mr. HORACE FIELD.

HOUSE AT WIMBLEDON.

A SMALL house now approaching completion in the Raymond Road, Wimbledon, for Mr. GILBERT PRIOR. The plan provides three reception-rooms, six bedrooms, bath-room and the usual offices. The builders are Messrs. BOWYER & Co., of Upper Norwood, and the total cost is 1,350*l.*

ST. MARY'S RECREATION-ROOMS, PUTNEY.

THIS building consists of a gymnasium, nurses' room, classrooms, billiard and play-room, and a quiet room for old men. The materials are red brick and tile and plaster. The site is good, having light on three sides, but the building is in a crowded part of Lower Putney. The total cost was 2,390*l.* The whole sum was guaranteed by Mr. W. J. LANCASTER, of Putney. A view of the building was exhibited in last year's Royal Academy. Messrs. JOHNSON & Co., of Wandsworth Common, were the contractors.

HAMPSTEAD PUBLIC BATHS.

THE ARCHITECTURAL ASSOCIATION.

A MEETING of the Association was held on Friday evening last at Conduit Street, W., Mr. W. H. Seth-Smith, president, in the chair. The following were elected members:—

Messrs. J. D. Robertson, W. A. Hodges, J. F. Schneider, D. W. Stewart, David Seth-Smith, H. Black, W. F. Barwell, T. R. Bridson, J. S. Brocklesby, J. O. Cook, J. S. Davies, W. W. Ellison, J. B. Fulton, G. Gould, R. H. Greig, H. C. Hollis, H. R. Houchin, J. R. Sykes, J. H. Waterworth, R. F. Wheatly, A. E. Bullock, P. R. Berry, G. Bune, H. W. Cathie, H. Collis, G. F. B. Daniell, C. René Harrison, D. B. Hedderwick, W. B. Hellard, F. Hibbard, D. M. Rees, W. A. S. Pellit, H. F. Murrell, A. F. Murray, H. S. Morran, H. Kenchington, W. B. Jemmett, D. B. Hart, R. G. Elwes, D. W. Crawford, A. S. Millar, C. S. Goodwin, G. Walker, L. Rawles, L. T. Moore, F. J. Sherrin, R. J. Howard, T. B. Wates, E. G. Sheakston, R. E. Stewardson, J. T. Sifton, E. F. Reynolds, G. Unsworth, T. L. Walker, T. W. Watkins, H. J. Wyeth, A. E. R. Gill, A. B. D. Lang, A. E. Hyams and H. Hyams.

A unanimous vote of thanks was passed to Mr. G. B. Carvill, hon. secretary, for the successful arrangement of the concert at the conversazione held in the preceding week.

Mr. FRANCIS BOND, M.A., read the following paper, entitled

French and English Cathedrals.

He said:—An Englishman, just returned from Boulogne, was asked what were his salient impressions of France. Two things, he said, filled him with astonishment. One was that the children in the streets spoke French; the other that the soldiers had red trousers and blue tunics, thus reversing the laws of nature. It is from this insular, not from any cosmopolitan point of view, that I approach the subject of the French cathedrals; some of the French cathedrals, for there are a great many. It is possible to be on fairly intimate terms with all the English cathedrals, of which there are no more than thirty-four, even including those churches which have been elevated to the rank of cathedrals in the present reign. In France, on the other hand, it is impossible to be even on bowing terms with the churches which are at present, or which have been, of cathedral rank. The south-east of France swarms with little cathedrals; even their names will be unfamiliar to many, such as Castres, Cavaillon, Dax. I have even had to explain sometimes where Séez is. Obviously, our survey must be limited to but a few of this vast number.

Let us look in imagination, first at the English cathedrals, and secondly at the more important of their sisters in France. I think I may take it that anyone who has visited and studied our English cathedrals does not afterwards mix them up in his memory, he can always keep each picture distinct; that is, the English cathedrals have the quality of distinction and individuality. For example, we never confuse with one another designs, though on closely analogous lines, such as those of the choirs of Beverley, Lincoln, Ely, Southwell, Worcester and Salisbury. In the same way the *tout ensemble* of the interior of Ely stands out apart sharply and clearly from that of the interior of Lincoln or Gloucester, or York. Yet more individual are the exteriors. Exeter reminds us of nothing else, nor does Lincoln or Lichfield, or Canterbury or Wells. Now this is by no means the case in France, or, at any rate, not to the same extent. Here are two interiors, one is the choir of Amiens, the other the nave of Auxerre. The differences between the two designs are so slight that without care and thought it is really difficult to remember which is which. And this is so with a great number of churches in the style of the Ile de France. Three years ago I spent a month among them, and I must confess to finding them somewhat monotonous and uninteresting. The fact is they were all to a large extent versions of Amiens. In Amiens every problem of French Gothic had been solved consummately. In no way could Amiens be bettered, and so this—the greatest of all the great works of the French Gothic—inspired, dictated and controlled the great mass of Gothic design even to the furthest ends of the country. So, when I reached St. Quentin, Châlons-sur-Marne, Troyes, Nevers, Auxerre, Tours, Rouen, Clermont-Ferrand, Limoges, Toulouse, Narbonne, I was constantly finding myself in the presence of something which I had seen before. Evidently about 1220 the thought of the best builders throughout Northern France flowed in the direction of the Amiens design; and the ideas which produced Amiens produced, or were soon to produce, similar work throughout the length and breadth of the country. In England, fortunately or unfortunately, we never had an Amiens. We never had one final summing up in one building of the best in our English Gothic. Wells choir had been an enormous advance about 1175. St. Hugh's design at Lincoln fifteen years later, though he came from Witham, near Wells, is in no way based on that of Wells. His choir in turn was a vast advance, yet no copy was made of it. There was never in England a superior person like Amiens to set the fashion. Not only English Gothic was non-French, but cathedral after cathedral went on its own sweet way, copying nobody. For that very reason, small as many of our cathedrals are, they are for their number—at any rate, as far as my opinion goes—more interesting than the cathedrals of the style of the Ile de France.

On the other hand, we must admit that there are French cathedrals which have enormous individuality. Nothing was built like Chartres before it; nothing has been built like it since. Rheims, too, stands out alone. Then there is a group of three cathedrals with double aisles of unequal height; Bourges was built first, being commenced about 1190; Beauvais and Le Mans were improved versions of Bourges. Le Mans, had it been completed, would, I think, have eclipsed even Amiens. Then there is a fine group of Transitional churches which have marked individuality—Paris, Sens, Senlis, Noyon, Soissons and Laon, to which we may add the noble choirs of St. Remi and Notre-Dame of Châlons-sur-Marne. Travel yet further from Paris, and new and strange yet beautiful varieties of Gothic will be found. The lovely "Norman patois" is seen in the choir of the Abbaye-aux-hommes and Bayeux; at Séez and Coutances; delightful links between the Ile de France and England. Travel far west, and in the choir of the cathedral of Châlon-sur-Saône, at Sémur and Notre-Dame de Cluny will be found another Gothic, bold, vigorous and independent. Nor will the achievements of what the French call Plantagenet Gothic, designs wrought in English realms, not by English brains, ever fail to leave sharp and distinct recollections of lovely work, from St. Serge at Angers to the magnificent cathedral of Poitiers, commenced about the year 1162 by our English Queen Eleanor. Going down south an Englishman finds himself confronted more and more with churches strange, novel and interesting. Some of them, like Toulouse and Bordeaux, have an aisled choir and an aisleless nave—a combination magnificently successful at Bordeaux. At last, at Albi, aisles disappear altogether; the whole cathedral becomes one continuous hall, stupendously impressive. If there is monotony in the Gothic of the Ile de France, there is none when its limits have been crossed. There is absolutely nothing in English Gothic to parallel these immense differences of French design. To the faithful who have learnt their Amiens, Poitiers and Albi are a bolt from the blue.

Another important difference is that the French cathedral in those districts which the tourist is most likely to visit is wholly Gothic. The exceptions are very few. At Nevers a western apse of the eleventh century survives, in striking contact with a thirteenth-century Gothic cathedral. At Beauvais the fall of the central spire preserved from rebuilding an archaic nave of the tenth or eleventh century; and Romanesque substructures remain at Bayeux and Châlon-sur-Saône. But out of our thirty-four English cathedrals, Peterborough and Durham are still mainly Romanesque; while large masses of Romanesque work remain incorporated in Bristol, Canterbury, Carlisle, Chester, Chichester, Ely, Exeter, Gloucester, Hereford, Lincoln, Norwich, Oxford, Ripon, Rochester, St. Albans, Southwell, Winchester and Worcester. So that of our older cathedrals only Lichfield, Salisbury, Wells and York are purely Gothic buildings. An extraordinarily clean sweep was made in the thirteenth century of what Romanesque there was in the Domaine Royale, and its corresponding abundance in the English cathedrals forms one of the most striking points of difference between the Mediæval architecture of the two countries.

If we look at the two sets of cathedrals chronologically we shall find equally marked differences. In England each period is fully represented by important cathedral work. In France it is not so. The period of Transitional or Rudimentary Gothic is well represented in England at Oxford, Ripon, Canterbury and Chichester; in France, by the cathedrals of Paris, Laon, Sens, Soissons, Noyon, Senlis, and to some extent by Chartres. Our lancet and geometrical work is represented by the great group of Gothic cathedrals of the Ile de France type. Our Tudor work ran on simultaneously with the French Flamboyant. In the preceding period much grand work was done at Bristol, Carlisle, Chester, Ely, Lichfield, Lincoln, Oxford, St. Albans, Wells, Worcester, Gloucester, Canterbury and York. In many parts of France work stops almost wholly from about 1328 to 1440, when the French were engaged in the most calamitous intestine conflicts, and for a hundred years were at war with ourselves. This period of anarchy, warfare, famine and plague was no fit seed-ground for architecture. The tale of those days is told quite clearly in many a French cathedral. You see quite distinctly where the works were suddenly stopped in the fourteenth century. You see where they were resumed late in the fifteenth century. When they were resumed, however, a great change had come over the spirit of Gothic architecture. In the natural course of things the choir, with some exceptions, for instance Amiens, had been built first. Then the nave was completed. (At Clermont, Limoges and Moulins the naves were only finished in the present century, that of Narbonne still remains a skeleton.) As a rule, it was just when nave and choir had been finished that war, civil and foreign, stopped the work. In most cases the transepts had been left to complete later; and so it is that we have the constant juxtaposition in a French cathedral of an Early Gothic nave and choir with a Flamboyant transept. In fact, this may be regarded as the normal type of a French Gothic cathedral. It is seen at Paris, Sens, St. Remi, Amiens, Limoges, Beauvais, Auxerre, Troyes, Senlis, Séez. Very magnificent these Flamboyant transepts are. Whatever be the failings of Late Gothic, we cannot afford to despise the composition of such transepts as those of Beauvais and Limoges any more than that of such spires of our own as Coventry and Louth, of equally late date.

Externally the French cathedral is, above all, a town church. It rises out of the huckstering of the place or the squalor of the narrow lane. In front perhaps is a sahara of dust, as at Amiens, Auxerre, Paris, Rouen. From no point of view can the grouping of the whole of its masses be seen. Nowhere in France is there such a comprehensive view as that from the north-east of Salisbury or Lincoln. It is seen only in parcels. Sens, for example, has an arid space in front; to the north it is blocked by private houses; to the south by the archbishop's palace; to the east by the Grande Séminaire. Peeps and glimpses only can be got of transepts, choir, nave and apse. A general view is impossible.

It is a surprise to see the south side of Bourges rising out of the emerald sward. The peaceful close and elms of Salisbury, the pools and springs of Lichfield and Wells, the wooded slopes and river of Durham, the encircling precincts of ancient canons' houses embowered in foliage and creepers are all wanting in France. In France we see the bare picture; in England we see it framed. In England such cathedrals as Canterbury, Durham, Ely, Lichfield, Lincoln, St. Albans, Wells, York, nobly dominate the town and landscape. With us the houses are low and give the cathedral value; in France they are much loftier, and strangle the great building in their close confines. Indeed, the real greatness of the building is often quite unrecognisable from outside. Mr. Garbett in his "Principles of Design" quotes an eminent authority who honestly thought Salisbury larger than Amiens. His error was pardonable. Following the south side of Amiens one sees three things only—the nave, the transept and the apsidal choir. Following the north side of Salisbury one see nave, porch, nave, great transept, choir, eastern transept, choir, retro choir, lady chapel. This bold handling of the masses infinitely increases the apparent magnitude of an English cathedral; nor must one forget the gulfs and abysses of shadow in the deeply-recessed flanks of such cathedrals as Lincoln and Salisbury, to which it gives rise. Especially is this the case where the plan with double transepts has been adopted. It is a strange fact that this, the archiepiscopal plan, appeared first in France—at Cluny and its daughter abbey, Souvigny. It found no favour in its own country, but its adoption in England gave us the finest exteriors we possess.

A French cathedral is essentially a town church; the English cathedral dwelt in a rus in urbe. To these delightful closes and precincts yet another charm is added in their cloisters. Cloisters were natural in cathedrals which, like Gloucester or Bristol, were served by Benedictine monks or by Augustinian canons. So beautiful an accessory, however, was the monastic cloister that it was added as an objet de luxe at Chichester, Exeter, Hereford, Lincoln, Salisbury and Wells, all served by secular canons. In Northern France, on the other hand, cathedral cloisters are far less common. Among better known examples may be mentioned those of Rouen, Laon, Noyon. In England, too, we elaborated first at Worcester a circular chapter-house, and out of this developed the polygonal form. These polygonal chapter-houses, of which so many glorious examples remain, *e.g.* at Southwell and Wells, have been described as the greatest triumphs of our Mediæval architecture. I do not remember to have seen one of them in France.

Where the exterior can be seen, it is seen to be hugely tall; its outlines, however, especially as one looks eastward towards the apse, are cut up in the most perplexing and vexatious manner by a forest of stone stays—permanent stone scaffolding—the flying buttresses. One's reason tells one that each has its special function, but the eye does not brook to be dictated to by the reason. After the tangled intricacies of such an apse as that of Amiens or Nevers, the eye rests with deep content on the simplicity of the north side of York.

We have seen how porch and eastern transept break up the monotony of the long flanks of our English cathedrals. The French cathedral also, as first designed, had grand shadow effects in the bays between the buttresses, buttresses which owing to the greater height and span of the vaults within, were of much greater projection than our own. Unfortunately these effects, too, were sacrificed almost everywhere. The walls of the nave-aisles were pierced through, and chapels were inserted from buttress to buttress. The buttresses practically disappeared as a factor of the exterior, and the flanks of the nave presented one shadowless monotony. This may be seen at Paris, Laon, Nevers, Dreux, Amiens, Autun, almost everywhere. We have had but one nave treated in this disastrous fashion, that of Chichester.

Another disability which afflicted the French designer was that, the interior being all in all to him, and the sublimity of the interior being dependent mainly on its altitude, the external roof which covered his vault was so enormously lofty that no towers which could be set upon it were adequate to dominate its masses, unless they were positively gigantic in height. It was only by carrying up spires to the vast altitudes of those of Cologne or Strasbourg that such an exterior could be brought together into unity. In some cases, as at Chartres and Coutances, the attempt was made and successfully. At Beauvais it was attempted, but the central spire, 510 feet high, collapsed. At Amiens the chef d'œuvre of all the French cathedrals, the failure of the exterior is supreme. Over the crossing was erected a spire of wood; though 357 feet high, it has the effect merely of a pinnacle. As for the western towers of Amiens, though effective from the west, they are from all other points of view absurdly inadequate. In England, vaulting ambition did not overleap itself.

The Lincoln people kept their roof so low that the three towers have a superb effect. What must Lincoln have been like when it had its three spires as well; the central spire 525 feet high, a mark far out at sea.

Not only in the elevation of his vaults, but in the composition of his tower groups, the Frenchman had ambitions amazing to the Englishman. The Englishman never got further than translating into Gothic the Abbaye-aux-hommes. The Frenchman essayed to translate into Gothic the tower groups of Cluny. Laon was designed for seven towers, Chartres for eight. No such groups were ever completed. And so French Gothic is, to a woeful extent, a study of unfinished exteriors—unfinished where groups had been designed of seven, eight or nine towers; unfinished often where, as at Amiens, three steeples only had been planned. We see something of what was designed in the tower groups of Laon, and in a simpler form at Autun, Sémur and Notre-Dame de l'Epine, Châlons; or, with intermixtures of modern work, in the cathedral and St. Ouen, Rouen, in Bayeux, and, above all, in Coutances, the finest tower group in France. Taking the French exteriors as a whole, one is left rather well content with English Gothic.

But if we turn to the grand façades to north, south and west we have little, I am afraid, which will bear comparison. A few of our transept-façades, *e.g.* those of Beverley and Lincoln and the north transept of York, have no superiors anywhere. (It is strange that we have no façade of first rank after the middle of the thirteenth century.) As has been pointed out, the final and most elaborate effort of French Gothic was made in the completion of transepts. What can be more accomplished than the composition of the north transept of Limoges? How commonplace it would have been in the hands of our contemporary English masons. If, on the other hand, we turn to the west, the French façade immeasurably surpasses anything of ours, Peterborough excepted, which is hors concours, being unique. In France they wanted to display statuary, but the grand façade does not sink to the level of an open-air reredos, as at Lincoln, Salisbury and Wells. Nor can I conceive any French architect so lost to dignity and self-respect as to let his cathedral sink away westward to the ground after the parochial fashion of Winchester, Norwich, Chester, Gloucester and Worcester. Sometimes, but rarely, he built two symmetrical spires, as at Séez, Angers, Bayeux, Coutances; or two unsymmetrical ones, as at Chartres. Sometimes he built a pair of western towers, as at Paris, Rheims, Bourges, Noyon, Tours, Laon It is possible that these also were intended to carry spires. (The addition of spires is needed to counterbalance the heaviness and undue horizontality of the present façade of Notre-Dame, Paris.) If he could not complete two western towers, at any rate he built one, as at Auxerre, Soissons, Limoges, Troyes, Albi. If he did not get his tower at the west, then, as at Exeter, it finds place at the end of the transept, *e.g.* at Bordeaux, Le Mans, Nevers. Of our west fronts that of York is most on French lines and the most successful, always excepting Peterborough. The evolution of the French grand façade from Senlis through Notre-Dame to its perfect consummation in Rheims is a fascinating subject which I must pass over.

In such a great façade the central idea is that it is none other than the portal of the House of God Himself. Here there are none of those "holes for rats and mice," as some one unkindly described the west doorways of Wells. These vast cavernous portals studded with legendary imagery are the glory of the French façade. The triple portals of Paris, Auxerre, Amiens, Rheims, will be familiar to many of you, while at Bourges the western entrances are no less than five in number. It is true that the comparative insignificance of the western entrances to our cathedrals is to some extent redeemed by lateral porches breaking most effectively the lines of our long low minsters, such as the north porches of Southwell, Hereford, Salisbury, Wells and Worcester, the south porch of Canterbury and the Galilee porches of Ely and Lincoln. But France also has noble examples of lateral porches—the lovely hawthorn porch of Bourges, the statued porches of Chartres, and the superb flamboyant porches added to Louviers and Albi, the latter incomparable among the works of the Later Gothic. On the whole as regards the façades of naves and transepts alike, we must bow to the superiority of the French.

When we pass within all is changed. We step into vast spaces of height incalculable; so overwhelming in their impression on the senses that it seems inconceivable that they should have been designed by the pigmy man who walks beneath. Nowhere does one so feel at once the insignificance and the greatness of man; he is overwhelmed by his own work. It is not to the beautiful but to the sublime that the genius of France has attained. Her Gothic cathedrals stand apart on a higher plane than all the other works of man; they are the supreme artistic achievement of our race. At Lincoln the choir is 74 feet high beneath the vault; at Amiens it is 140 feet; Beauvais is nearly 154 feet (one Lincoln choir might well be superposed on another inside Beauvais). It is true that our English cathedrals have the best of it in length. Winchester is 56 feet longer than Amiens, and very beautiful effects are produced by the long-drawn succession of arch after arch rapidly passing out of count. In fact, we may say Frenchmen and Englishmen alike, in building a house for Him who is without length of days, sought to produce the impression of infinity—in England by suggesting infinite length, in France by suggesting infinite height. Ours was the easier task. And this impression of interminable distance was aided yet again by the numerous screens, often carrying organs, which crossed the church, of which two remain at Ottery St. Mary's, while greater churches had three or more. How greatly an interior is foreshortened by the want of a substantial screen is seen at Tewkesbury. At Gloucester and at Exeter the organ-bearing screens add enormously to the apparent length of the church. Screens have been swept away from the French cathedrals almost universally. Their length, already inadequate to our English eyes in proportion to the greater span and greater height of the central nave is grievously curtailed. A beautiful example remains at Notre-Dame de l'Epine, near Châlons-sur-Marne. A sumptuous flamboyant screen is the glory of the church of the Madeleine at Troyes. The Renaissance screen of Limoges Cathedral still survives, but is thrust back against the western wall. Albi alone retains in all its integrity the whole of its screen and choir-enclosure.

What, perhaps, strikes an Englishman most is the homogeneity of the whole internal design of nave and choir. He has been accustomed to nothing of this, except, perchance, at Salisbury. To him a cathedral means a hybrid, a mongrel building—a collection of scraps and patches. It is a revelation to see a harmonious whole, like that of Paris or Amiens or Bourges or Rheims or Chartres, or Poitiers, Laon, Soissons, Noyon, Tours, Troyes, Coutances, Séez. At Chichester, for instance, he has seen one design in the nave, a second in the retro choir, a third in the porches, several designs in the nave chapels, one in the south transept and another in the north. Equally mixed up and discordant are Rochester, Hereford and St. Albans. York has one design for the transept, another for the nave and choir. Canterbury choir is absolutely disconnected from and independent of nave and transepts, and so on with the rest, Salisbury only excepted.

This, which is the greatest blot æsthetically in our English cathedrals, is archæologically their greatest charm. When one has seen one bay of the nave of Salisbury or Amiens one knows what to expect in each of the rest; there are to be no surprises, no novelties. In such a cathedral, too, as Amiens or Salisbury there are few archæological problems to unravel, few nuts to crack; the constructional history of the cathedral tells itself clearly and unmistakably. But a man must think much and often, and even then he will require Mr. St. John Hope's assistance, to ascertain how Rochester Cathedral grew. I remember finding Wakefield and Ripon cathedrals more interesting than stately York. Here and there, like the Frenchmen, we were iconoclasts At Lichfield, Salisbury, Wells and York the builders cleared away every scrap of Romanesque from the face of the earth. But everywhere else they left masses of Romanesque work standing. Often we have a Romanesque nave with a Gothic choir, as at Southwell; sometimes Romanesque below and Gothic above, as in the choir of Hereford; sometimes blocks of gaunt Romanesque protruding still from Gothic surroundings, as at St. Albans. Parallels may be found in France, but they are rare. Toulouse has a Gothic choir, but never succeeded in rebuilding its twelfth-century hall nave. The Romanesque nave of Le Mans was thought too good to be pulled down Gothic is superposed on Romanesque at Bayeux, at Châlon-sur-Saône, and at the abbeys of Souvigny and Brioude. But, on the whole, we may say that English cathedral architecture is generally a study of contrasts; that of France a study of harmonies.

If we turn to the internal elevation we shall find a marked difference between the French and the English treatment. The English cathedrals are low; the loftiest vaulted cathedral, Salisbury, is 85 feet high. They sink downward till 74 feet is reached in Lincoln choir, and 70 feet in Exeter. This conditions the English elevation. For an effective interior the piers and pier arches must be lofty. But where the vaults are low there is no room for lofty piers and arches. The piers have to be short and squat, as at Wells and Lichfield. What a change to turn from these to the acute, soaring arches of Amiens, Clermont and Narbonne. Both in France and England the internal elevation usually consists of three members, the pier arcade, triforium and clerestory. The French disposition of these—which is seen at Westminster and Beverley—is to give half the height to the pier arcade, and of the other half to assign one-third to the triforium and two-thirds to the clerestory. Some such proportions prevail almost everywhere in France. In England the proportions are seldom good. The clerestory, as a rule, is too low and the triforium too lofty.

The greatest difference, however, as regards proportion is the relation of height to span. With us, except at Westminster, Norwich and Beverley, the height is usually only about twice the span. In France, though the central aisles are much wider than our own, they are usually three times as high as they are broad. It is beyond question that in the matter of proportion English Gothic erred; and proportion, as some one has said, is the life-blood of architecture.

As I have said, we were often inclined to sacrifice the clerestory to the triforium. The fact is, there was in England a very genuine love for the triforium, and a great and well-founded belief in its capacities for artistic development. The French, I think, at no time set much store by it. In great churches, such as Chartres, Limoges and the choir of Auxerre, the triforium is of a very simple character. Our rich triforia, such as those of Chichester retro choir, Lichfield, Lincoln, Salisbury, Worcester, Westminster, Beverley and York, are the exception in France. The elaborate triforium of Séez is one of the proofs of the presence of English influence in the design of that beautiful little cathedral, and when it does occur it is seldom a blind storey proper. As a rule, as in Amiens nave, it is blocked up behind by a solid wall. In this way the Frenchman deliberately gets rid of the pits of shadow and gloom which lie at the back of the arcades of such an open triforium as that of Lincoln presbytery. Frequently, after the middle of the thirteenth century he lowers the aisle roofs and glazes his triforium, as in Amiens choir, Clermont-Ferrand and St. Ouen, Rouen. But this is no gain. The clerestory at Clermont-Ferrand is quite tall enough without having a triforium added to it. One instinctively desiderates a three-storey elevation; the Frenchman has reduced it to an elevation of two storeys. In twelfth-century Gothic an elevation of four storeys had not been uncommon. It is seen at Laon, Soissons and Noyon, and survives in part in Paris. It is seen in transition in Rouen Cathedral and in the fine church of Eu. The extra storey is gained by vaulting the aisle in two storeys instead of one. The additional storey has the effect of increasing the apparent height of the church. The objection to it was that it curtailed the pier arcade and clerestory.

Looking east or west unity is the mark of the French design. The French cathedral is a house at one with itself. This is largely due to the absence of a central tower and of the obstructive piers on which such a tower rests. Our exteriors owe much to the central towers; our interiors are ruined by them. Canterbury nave and choir are as much disconnected as if they were in separate counties; it is not one but two Canterbury cathedrals. It is rarely so in Northern France, except in Normandy and Burgundy. The beautiful church of Sémur is constricted into a mere tunnel in order to allow of a stone central spire. At Bourges, at Bazas, and Nevers even, the transept was omitted; at Albi the aisles were omitted as well. Nothing was allowed to stop the uninterrupted flow of the main lines of the church from west to east.

In plan the French cathedral attaches more closely to the type of Hereford, Exeter, Winchester, Salisbury and Wells than to the simple parallelograms of Lincoln and York. It is indeed from the east end of Wells only that we can form any conception of the mysterious, intricate, ever-changing vistas and perspectives which fascinate one in a French chevet. The eastern glass walls of Lincoln and York are plain prose indeed to the poetry of the eastern endings of the French cathedrals. And when it is remembered that some of the French cathedrals have double aisles to their nave, and that nearly all have their aisles flanked by continuous chapels, it will be seen that there is a romance about the progress up a French cathedral from portal to altar which is here unknown. If, however, we have not the seven chapels of the chevet of Amiens, the eleven of Orleans, the seven of Le Mans, we have by compensation the eastern transept—a most picturesque substitute. And while we are speaking of transepts it is worth noting that the English transept has usually an aisle on the eastern side only, on which side alone altared chapels were practicable. Beverley and Salis bury are examples. Even in religious art the Englishman was ever practical and economical. I do not recollect these lopsided transepts in France.

As regards detail, I think we may say that the Englishman sometimes bestowed on his detail a loving care which is not always found on the other side of the Channel. The Frenchman's mouldings are few and bold. The outline of the pier arches is not marked, as with us, by an emphatic hood-mould. His piers on plan are simple in comparison with those of Wells, Lichfield and Exeter. But the Englishman, as soon as he had begun to learn the new lesson of Gothic, burst at once into an intricacy of delicate, refined mouldings such as the Frenchmen never dreamed of. Take a first-class example from either country—the cloister of Mount St. Michel and the Beverley staircase—and you will see the difference. In statuary our case is hopeless. I can show you nothing to compare with the statue of the Virgin in the group of the Annunciation, which stands in the central doorway of the façade of Rheims. In foliated capitals nothing, perhaps, was ever done so good as the twelfth-century capitals of Sens, Laon, Soissons—truly architectural in treatment. In later days marvels of foliage were produced—conventional foliage of the highest beauty at Wells and Lichfield; naturalistic work in the chapter-house of Southwell. With the latter we may compare the fine capitals of Notre-Dame, Cluny, and the superb example from the nave of Rheims. Honours may be said to be divided.

"It is not so above." Look at the vault. What a poor, thin, ineffective culmination and climax for the riches below. Think of the vaults of the naves of Lincoln and Lichfield, of Norwich, Tewkesbury and Winchester, and above all of that of Exeter, fastening down and tying the whole building together like the banded lid of some ancient strong-box. Particularly lamentable is the absence in France of the longitudinal ridge-rib; more than anything else this binds together a cathedral's disconnected bays and enforces unity. Examples of it do occur, *e.g.* at Souvigny and St. Riquier, but they are rare. The reason, I think, is not far to seek. The French, to lessen the thrusts, always inclined to build their vaults domical. Introduce a ridge-rib and it will be found to wabble up and down in a most distressful manner, as, indeed, it does in the great transept of Lincoln and in Southwell choir. Only at the very end, when it was too late, did the French repent, as at Abbeville and St. Riquier, of their failure to develop the vault.

And so we get back to our normal attitude of complacency. We do not get the "grand nature" in our English cathedrals. They are human and lovable; foreign travel does not spoil one for them; one ever comes back to the sweet loveliness of Lichfield and Wells and Exeter with renewed delight. Amiens, Clermont, Narbonne are something more than human; it is awe, admiration, almost terror they excite; they seem superhuman, not built for mortal men by mortal men. There is nothing overwhelming or overpowering in the ancient churches any more than in the scenery of England; it is a little country, a peaceful, restful country; no Alps—

> No grand nature;
> All the fields
> Are tied up fast with hedges, nosegay-like;
> The hills are crumpled plains; the plains pastures;
> And if you seek for any wilderness,
> You find at best a park.

The English cathedrals were made for England.

Mr. E. S. Prior said the admirable paper would convert many of those who heard it to Mr. Bond's views, but he himself was still inclined on some points to rest heretical. There should be no comparison between English and French cathedrals, though half of them were monastic establishments. Wells, Salisbury, Lincoln, Lichfield, Exeter and York spoiled Mr. Bond's argument regarding the façade. The secular cathedrals were also built with western fronts. The cavernous French porches were debateable; they were rather dark, and in an English climate they would be darker still. The case of English sculpture was not hopeless. There were many fine fragments of thirteenth-century work at Lincoln and Oxford. Mr. Bond had put it extremely well when he said that an acquaintance with this French cathedral architecture carried with it a sense of man's insignificance and man's greatness. But was none of that feeling produced by English work? In Durham nave he found the noble nature of building displayed as well as it was anywhere outside of Egypt, and at Hexham also.

Mr. Hugh Stannus, who proposed a vote of thanks, agreed with Mr. Prior in his remarks about Durham Cathedral; but he had understood Mr. Bond was touching on Gothic and not Romanesque work. It was well to remember the transept had an actual functional value in the planning of such edifices, but in England the greater care was taken in having the chapels facing the east. It was, therefore, necessary to have enormous transverse galleries, and hence the reason of double transepts.

Mr. Alexander Wood and Mr. A. S. Flower seconded the motion.

The President, on putting the vote, said it was very interesting to hear of the independence of feeling in our English cathedrals, and this independence was still found in our building frontages. It was gratifying also to learn that the detail and shadow of the English mouldings surpassed those in the French cathedrals.

A vote of thanks was also accorded to Mr. Osborne Smith for the able way in which he had shown on the screen lantern views illustrating both English and French cathedrals and churches.

EGYPT AND EARLY EUROPE.

A LECTURE was delivered by Professor Flinders Petrie before the members of the Birmingham and Midland Institute on Monday on "Egypt and Early Europe." He declared that the subject of the relationship between Early Europe and Egypt was one of more than academic interest, for it enabled us to trace not only the effect the East had had upon our civilisation, but it enabled us clearly to understand the ages to which our civilisation extended back. Examples of black pottery, which were certainly not made in Egypt, and had every mark of having been brought into that country from places situated somewhere on the Mediterranean, had been found in prehistoric Egyptian tombs dating from about 5,000 or 6,000 years before Christ. Similar examples of pottery had been found in Bosnia and in Spain, near Madrid, and in the lowest levels of the great prehistoric town discovered by Mr. Evans last winter beneath the palace of the kings of Crete. From the discoveries that had been made it seemed safe to assume that trading was carried on between Egypt and ports on the Mediterranean 5,000 or 6,000 years before Christ by means of large galleys. Gold that was used in Egypt 5,000 years before Christ had been found on analysis to contain 13 per cent. of silver—a fact which pointed to its having come from Asia Minor. The lecturer then had thrown upon the screen examples of Greek and Egyptian pottery and metal-work, and traced the influence of Egyptian upon Greek art and vice versâ, remarking that in the early days, in the Mycenæan period for instance, Egypt probably borrowed more from Greece than Greece from Egypt, though in the classical times Greek art was very largely influenced by Egyptian art. Professor Petrie having emphasised the importance of Mr. A. Evans's discoveries in Crete, which he said had revealed a civilisation which was in full sway 2000 B.C., and which had probably been another 2,000 years in attaining the height of the perfection it then had, contended that in ages past there had in the North been a civilisation which was indigenous, and had developed quite independent of any other land. The Dacian civilisation was an example of the civilisation which had developed in Europe quite independent of Greece and Rome.

PORTLAND PLACE, W.

THE late Lord Kensington's town house, No. 31 Portland Place, to be sold in a few days, is in the widest thoroughfare of the Metropolis—125 feet is the measurement. Portland Place, so named after the ground landlord, was designed by the Scottish architects, Robert and James Adam, about 1778. For the then Earl of Bute the Adams built Lansdowne House, Berkeley Square, and for Lord Mansfield Caen Wood House, adjoining Hampstead Heath. It was because of the association of the brothers that the Adelphi was given its name; furthermore, Adam Street, John Street, &c., are commemorative. Glasgow, again, owes its infirmary to Robert. It is not generally known that the great width of Portland Place is because of a clause in Lord Foley's lease which prevented the Duke of Portland erecting any buildings which should intercept the view from Foley House. It stood at the southern end of what is now Portland Place, with whose width it corresponded, on the site now occupied by the Langham Hotel. At first houses in Portland Place were eagerly sought after by fashionable folk, but now it is regarded as "without the pale" by society as a whole. It was from her home in this street that the daughter of General Sir Henry Clinton eloped with Mr. Dorking in 1788, her pursuers being mystified by half a dozen hackney coaches starting off suddenly in as many directions the moment she had taken her seat—a pre-arranged plan, of course. Of eminent inhabitants there have been many. Talleyrand lived at No. 51, and of him, at the age of eighty, Sidney Smith has left us an unattractive picture:—"He had no teeth, and, I believe, no roof to his mouth—no uvula—no larynx—no trachea—no epiglottis—no anything. It was not talking; it was gurgling." Horace Walpole dated a letter to Pennant from No. 5, Lord Byron made love to Miss Millbank at No. 63, and Mr. Sawyer Morret, of Rokeby, friend and correspondent of Scott, at one time occupied No. 24. As his many friends and admirers are aware, too, the Scottish artist, Mr. W. Q. Orchardson, lives on the western side of Portland Place, at the Regent Street end.

EXPLORATION IN CRETE.

THE following communication respecting Cretan exploration has been issued :—The preoccupation of the public mind caused by the war in South Africa made it impossible last year to press the claims of Cretan exploration. Sympathy, indeed, was not wanting. A representative committee was formed, and we were able to initiate a fund, to which the patronage of the High Commissioner of the Powers in Crete, Prince George of Greece, was graciously accorded. Thanks to the good offices of His Royal Highness, a number of important sites were set apart for British excavation. But of the 5,000*l.* required for the adequate realisation of our scheme barely a tenth part was collected by private subscriptions.

Meanwhile Italian and French missions, supported by Government aid, had already been in the field for several months. Even to hold their own it was absolutely imperative that British representatives should make a beginning. We had no choice but to embark last spring on an enterprise which, once begun, for the honour of British science must be carried through.

The sum of less than 500*l.* that had been privately collected was devoted to the assistance of two separate enterprises. Half of the amount went to assist one of the undersigned in the excavation of a site, already acquired by him at Kephala on the site of Knossos, which proved to contain the remains of a prehistoric palace. How inadequate was this contribution may be judged from the fact that five-sixths of the cost of the work—still far from completion—have fallen on the explorer's shoulders. The other half of the sum collected was allocated to the director of the British school at Athens for the exploration of the prehistoric town and tombs of Knossos and of the great cave of Zeus, on Mount Dicta. This was supplemented by 200*l.*, spared with difficulty from the annual income of the school, and by the payment of an architect from the same source.

The extraordinary results which rewarded both these undertakings have attracted such wide attention that a very brief statement will suffice here. The discoveries made at Knossos throw into the shade all the other exploratory campaigns of last season in the Eastern Mediterranean by whatever nationality conducted. It is not too much to say that the materials already gathered have revolutionised our knowledge of prehistoric Greece, and that to find even an approach to the results obtained we must go back to Schliemann's great discovery of the Royal tombs at Mycenæ.

The prehistoric site, of which some two acres have now been uncovered at Knossos, proves to contain a palace beside which those of Tiryns and Mycenæ sink into insignificance. By an unhoped-for piece of good fortune the site, though in the immediate neighbourhood of the greatest civic centres of the island in ancient, Mediæval and modern times, had remained practically untouched for over 3,000 years. At but a very slight depth below the surface of the ground the spade has uncovered great courts and corridors, propylæ, a long succession of magazines containing gigantic store jars that might have hidden the Forty Thieves, and a multiplicity of chambers, pre-eminent among which is the actual throne-room and council chamber of Homeric kings. The throne itself, on which (if so much faith be permitted to us) Minos may have declared the law, is carved out of alabaster, once brilliant with coloured designs and relieved with curious tracery and crocketed arcading which is wholly unique in ancient art, and exhibits a strange anticipation of thirteenth-century Gothic. In the throne-room, the western entrance gallery and elsewhere, partly still adhering to the walls, partly in detached pieces on the floors, was a series of fresco paintings, excelling any known examples of the art in Mycenæan Greece A beautiful life-size painting of a youth, with a European and almost classically Greek profile, gives us the first real knowledge of the race who produced this mysterious early civilisation. Other frescoes introduce us to a lively and hitherto unknown miniature style, representing, among other subjects, groups of women engaged in animated conversation in the courts and on the balconies of the palace. The monuments of the sculptor's art are equally striking. It may be sufficient to mention here a marble fountain in the shape of a lioness's head with enamelled eyes, fragments of a frieze with beautifully cut rosettes, superior in its kind to anything known from Mycenæ; an alabaster vase naturalistically copied from a Triton shell; a porphyry lamp with graceful foliation supported on an Egyptianising lotus column. The head and parts of the body of a magnificent painted relief of a bull in *gesso duro* are unsurpassed for vitality and strength.

It is impossible here to refer more than incidentally to the new evidence of intercourse between Crete and Egypt at a very remote period supplied by the palace finds of Knossos. It may be mentioned, however, as showing the extreme antiquity of the earlier elements of the building that in the great Eastern Court was found an Egyptian seated figure of diorite, broken above, which can be approximately dated about 2000 B.C. Below this again extends a vast Stone Age settlement which forms a deposit in some places 24 feet in thickness.

Neither is it possible here to dwell on the new indications supplied by some of the discoveries in the "House of Minos" as to the cult and religious beliefs of its occupants. It must be sufficient to observe that one of the miniature frescoes found represents the façade of a Mycenæan shrine, and that the palace itself seems to have been a sanctuary of the Cretan God of the Double Axe, as well as a dwelling-place of prehistoric kings. There can be little remaining doubt that this huge building with its maze of corridors and tortuous passages, its medley of small chambers, its long succession of magazines with their blind endings, was in fact the Labyrinth of later tradition which supplied a local habitation for the Minotaur of grisly fame. The great figures of bulls in fresco and relief that adorned the walls, the harem scenes of some of the frescoes, the corner-stones and pillars marked with the labrys or double axe—the emblem of the Cretan Zeus, explaining the derivation of the name "Labyrinth" itself—are so many details which all conspire to bear out this identification. In the palace-shrine of Knossos there stands at last revealed to us the spacious structure which the skill of Dædalus is said to have imitated from the great Egyptian building on the shore of Lake Moeris, and with it some part at least of his fabled masterpieces still clinging to the walls.

But, brilliant as are the illustrations thus recovered of the high early civilisation of the city of Minos and of the substantial truth of early tradition, they are almost thrown into the shade by a discovery which carries back the existence of written documents in the Hellenic lands some seven centuries beyond the first known monuments of the historic Greek writing. In the chambers and magazines of the palace there came to light a series of deposits of clay tablets, in form somewhat analogous to the Babylonian, but inscribed with characters in two distinct types of indigenous prehistoric script—one hieroglyphic or quasi-pictorial, the other linear. The existence of a hieroglyphic script in the island had been already the theme of some earlier researches by the explorer of the palace, based on the more limited material supplied by groups of signs on a class of Cretan seal-stones, and the ample corroboration of the conclusions arrived at was, therefore, the more satisfactory. These Cretan hieroglyphs will be found to have a special importance in their bearing on the origin of the Phœnician alphabet.

But the great bulk of the tablets belonged to the linear class, exhibiting an elegant and much more highly-developed form of script, with letters of an upright and singularly European aspect. The inscriptions, over 1,000 of which were collected, were originally contained in coffers of clay, wood and gypsum, which had been in turn secured by clay seals impressed with finely-engraved signets and countermarked and countersigned by controlling officials in the same script while the clay was still wet. The clay documents themselves are, beyond doubt, the palace archives. Many relate to accounts concerning the Royal Arsenal, stores and treasures. Others, perhaps, like the contemporary cuneiform tablets, refer to contracts or correspondence. The problems attaching to the decipherment of these clay records are of enthralling interest, and we have here locked up for us materials which may some day enlarge the bounds of history.

The work of excavation in the Palace of Knossos is barely half completed, and yet whichever way we turn the relics already obtained from within its walls supply new and unhoped-for data for the reconstruction of early Ægean civilisation. Nor is this all. Exploratory digging to the south and west of the palace revealed a veritable Pompeii of houses of the same early period, which yielded, among other things, by far the finest series yet found of vases of the singular primitive Cretan polychrome style, unrepresented in European museums. One remarkably well-preserved block of buildings appears to be a group of shrines devoted to a Pillar worship, such as is known on the Phœnician and Palestinian coasts, and of which the palace itself supplies an example connected with the cult of the Cretan Zeus.

Finally, in the early heats the clearing of the cave of Psychro, notorious since some years for its rich votive deposits, was carried out. This cave is no other than the holy Dictaean Cavern, in which Hesiod and Virgil state that the Supreme God was cradled. There took place the legendary union of Zeus with Europa, and therefrom, as from another Sinai, Minos brought down the Law after communion with the god. The blasting away of the fallen rocks in the upper half of the grotto revealed a rude altar of burnt sacrifice and a sacred enclosure or temenos, cumbered with the votive deposits from 5 feet to 7 feet deep, full of vases, libation tables, weapons and implements in bronze, bone and iron, statuettes in terra-cotta, and models of everyday objects, dedicated to the god. In the lower half opens a profound abyss, where a gloomy subterranean pool out of which rises a forest of stalactitic pillars continues into the heart of the mountain. Here a great surprise was in store. For not only was the bottom mud full of bronze statuettes, gems and articles of male and female use, but the vertical slits in the pillars were found to have been used as niches and to contain an immense number of votive double axes, weapons and trinkets. This vast cavern was undoubtedly the mysterious Holy of Holies into which Minos descended alone and on emerging, as Dionysius says, showed the Law to the people as a gift from Zeus himself. The discoveries made in this cave cover the whole primitive period of Cretan history back to the pre-Mycenæan epoch.

The clouds of war are at last lifting, and it is with confidence that we now appeal for help to carry on the work already set in hand. The Palace of Knossos is still but half uncovered, and the large expenditure entailed by excavation of this vast building, which its explorer hopes to take up again in February next, is a severe strain on individual resources. Among the other sites included in the British concession are two Votive Caves, the citadels of more than one Mycenæan city of Eastern Crete, and Præsos, the ancient capital of that region, within whose walls the language of the old indigenous stock—the Eteokretes of the Odyssey—survived to historic times. Here, if anywhere, should be found the key to the undeciphered hieroglyphic script of Crete, and it is to be hoped that sufficient funds may be forthcoming to begin excavation at this spot during the coming season under the auspices of the British school at Athens.

The exploration that we have taken in hand is not one confined to the backwaters of antiquarian research. It lies about the fountain-head of our own civilisation. Inadequately supported as it has been, it has already produced results which throw an entirely new light on the first development of high art, the origin of letters, the early religion and ethnography of the Greek lands, the most ancient connections between Europe and Egypt. To insure the execution of the still extensive programme before us "The Cretan Exploration Fund" needs contributions to the amount of at least 3,000*l*. So much impressed was the British Association with the scientific importance of the undertaking, that at its recent meeting, after hearing reports of the results of the late excavations, it made the exceptional grant of 145*l*. towards the furtherance of our scheme. In this field, at least, British archæological enterprise has been fortunate enough to obtain a strong lead, and it rests with the public to see that it is maintained.

A. J. Evans.
October 29. D. G. Hogarth.

Subscriptions may be paid either to Mr. George Macmillan (as hon. treasurer), at St. Martin's Street, London, W.C., or into the account of "The Cretan Exploration Fund," at Messrs. Robarts, Lubbock & Co.'s Lombard Street, E.C.

DICKENS'S TAVISTOCK HOUSE.

An interesting memorial of Charles Dickens is now, says the *Daily News*, in course of destruction by the housebreaker. Tavistock House, Tavistock Square, to which he removed on leaving Devonshire Terrace in 1851, is being pulled down by the ground landlord, the Duke of Bedford. The dismantling began a few days since; the windows are out, and the roof is being removed. Up to the present week the house, which was a handsome, substantial and well-kept building, remained externally just as Dickens left it in 1860, and as it stands in the engraving in Forster's "Life of Dickens." It has undergone some vicissitudes since Dickens's days. He sold it to Mr. Davis, a Jewish gentleman, of whom he said in a letter to Mr. Wills, "I must say that in all things the purchaser has behaved thoroughly well, and that I cannot call to mind any occasion when I have had money dealings with a Christian that have been so satisfactory, considerate and trusting." Mr. Davis was succeeded by Mr. and Mrs. Weldon, with whom Gounod lived for some time, holding singing classes in the large drawing-room. Of late years the house has been a Jews' College, and latterly has, for some months, been empty. It stands behind the north-east corner of Tavistock Square, and like its neighbour, Bedford House, which is also being dismantled, is too large for the neighbourhood.

Dickens occupied the house for nine years. He bought it of his friend, Frank Stone, who had lived there several years. Dickens's house in Devonshire Terrace had become too small for him, and his lease was falling in. Stone was also preparing a new house for himself, and moved his furniture into the Devonshire Terrace house, that Dickens might carry out some changes in Tavistock House which were planned by his brother-in-law, Henry Austin. Dickens and his family went to Broadstairs while these works were being carried out, and removed into Tavistock House in November. Mr. Forster tells us that "Bleak House" was begun in his new abode of Tavistock House at the end of November 1851. On the first Twelfth Night in the new home the children's theatricals were begun, and were renewed till the chief actors were children no longer. "The best of these performances," says Mr. Forster, "were 'Tom Thumb' and 'Fortunio,' in 1854 and 1855, Dickens now joining first in the revel, and Mr. Mark Lemon bringing into it his own clever children and a very mountain of child-pleasing fun in himself." At a later period the schoolroom was turned into a theatre, Clarkson Stanfield providing the scenery and Cooke, of Astley's, planning the seats. "You will be surprised at the look of the place," wrote Dickens. "It is no more like the schoolroom than it is like the sign of the Salutation inn at Ambleside, in Westmoreland." Dickens was overwhelmed with requests from friends to see the play. "My audience is now ninety-three," he wrote in despair, "and at least ten will neither hear nor see." So the play was continued for several nights. After he acquired Gadshill Place and made it a temporary summer residence, he still regarded Tavistock House not only as his London residence, but as his home. It continued to be his permanent family abode till 1860, when he sold it, and finally removed to Gadshill. His nine years' occupancy of it has made it an object of much interest, and American admirers especially have constantly sought it out. It has been easily recognised by readers of Forster's memoir.

LONDON UNIVERSITY AND ARCHITECTURE.

The letter to the *Times* of the Principal of King's College, London, in which he calls attention to the facilities for the study of architecture afforded by King's College, and adds:—"Whether the path to a degree in architecture is to be through the B.Sc. in engineering, with architecture as one of the alternative branches of study for that degree, or through a specially-created degree in architecture *eo nomine*, is a question, involving debateable points of principle, which awaits the new Senate," has been the subject of a reply in the same journal by Mr. Reginald Blomfield. He says:—

It is not necessary here to discuss the remarkable suggestion of the possibility of ranking architecture as a branch of engineering; what should be pointed out to the public, and more particularly to the new Senate, is that the whole idea of a degree in architecture is repugnant to a strong body of opinion in the profession itself, in regard to the fact that such a degree is about as practicable as a degree in painting or a degree in sculpture. The whole scheme of a degree in architecture is misleading to the public. All architects are agreed as to the necessity of an education in architecture as thorough as it is possible to provide, but practical men have bought their experience that this education must be something wider and more intimate than any that it is possible to provide in the classroom and the school. The provision for the technical education of architectural students in England is absurdly inadequate. If the few bodies that attempt this education were equipped and organised on the scale of the great German institutions, there would be something to be said for a method of training somewhat alien to English instincts. At present the technical training provided for architectural students is conducted on a hugger-mugger system, and the money expended upon it is, for the serious purposes of architecture, money thrown away.

Mr. Arthur Cates also writes:—The statement made by Mr. T. Bailey Saunders in his letter which appeared in the *Times* of the 25th ult., that, so far as he is aware, there is no school of architecture in London at the present moment which has reached the level of efficiency displayed in the schools of medicine and engineering, or at all comparable with any of the more advanced schools of architecture abroad, was certainly based on the knowledge gained by him as secretary to the statutory Commission on the London University, as also on the ample evidence on the subject submitted to the Cowper Commission, and cannot be in any way controverted.

All, therefore, who are interested in placing architectural education on a proper basis must be gratified that Principal Robertson should have thought it well to have claimed in his letter, which appeared in your issue of October 23, that in King's College, London, there exists a department for the organised teaching of architecture in relation to applied science which has been developed into a systematic course of training which in thoroughness and efficiency is on a level with the existing schools of engineering in London.

The greatest credit and honour are due to the late Professor Banister Fletcher for the energy and generosity which he devoted to the development of the architectural classes in the college, and the wise manner in which he used his influence with the Carpenters' Company to obtain from that enlightened body that financial support and encouragement without which his endeavours would have been fruitless. Much good has no doubt resulted from these efforts and will hereafter result from those of his successor Professor Elsey Smith, but the systematic course of training indicated by Dr. Robertson appears to be rather a somewhat elementary course of engineering, specialising more exclusively in architecture in the third year, and not in any degree satisfying the requirements of a systematic course of teaching in the art and science, theory and practice of architecture, which alone would justify its claim to take its proper place in the studies of the University.

A course of the description indicated cannot be accepted as affording a satisfactory systematic training in the study of architecture, or one at all comparable with the organised instruction available in France and Germany, or in any way approaching the admirable systems which within recent years have, under the influence of Professor William R. Ware, been established in the Universities and colleges in the United States of America, among which may be mentioned the department of architecture in Harvard University; Columbia University, in the city of New York; Cornell University and Syracuse University in New York State; the Massachusetts Institute of Technology, Boston; the University of Pennsylvania, Philadelphia; the University of Illinois, Chicago, &c.

In each of these institutions there is now established a perfectly organised and equipped school of architecture, amply staffed and obtaining from the other departments the special teaching in cognate subjects necessary for the education of the architect. Thus in Columbia University there are nine professors and instructors attached exclusively to the architectural department, and fourteen professors and instructors from other departments of the University supplement the special teaching in their several branches of knowledge.

In these institutions a special matriculation examination must be passed to obtain admission to the classes. A satisfactory elementary knowledge of essential subjects is thus secured, and the training in architecture commences with the beginning of the course, is continuously developed throughout the whole period of teaching, and is not relegated to a mere specialising towards the end of the course.

If Dr. Robertson and the Council of King's College, with the aid of Professor Elsey Smith, would carefully study the methods of the American universities, which are so admirably adapted to meet the requirements of the case, and frame on a similar basis a systematic course of organised teaching of architecture, as an art and as a science, in both theory and practice, there might be some hope that when such a course was well established architecture might obtain that recognition from the London University which its importance to the nation, the State and the individual demands for it, but which under existing conditions the Senate is hardly likely to extend to it.

At King's College the nucleus exists; it only needs that the good work inaugurated by Professor Fletcher should be further developed and a properly organised course of systematic teaching established on sound lines (for which, indeed, liberal endowments from the wealthy classes who have the greatest interest in the promotion of the advancement of architectural study would be necessary) to help to raise architectural education in England some little way towards the position it has so recently attained in America.

EXHIBITION OF MODERN ILLUSTRATION.

THE exhibition which is being arranged in the Victoria and Albert Museum, South Kensington, under the authority of the Board of Education, will comprise typographical reproductions and the original drawings by leading artists executed since 1860, and will demonstrate the progress made in the production of line and half-tone process blocks since that time. Wood blocks will also be exhibited which were drawn upon by such artists as Lord Leighton, Sir J. E. Millais, Frederick Walker, George J. Pinwell and A. B. Houghton, some of which have been engraved by the best engravers in this period.

A considerable number of works from artists who have been invited to contribute have already been received, including some excellent representative examples of German and Spanish art. Similar works are expected from France, Sweden, Norway, Denmark, Russia, America and other countries, which, it is believed, will make the exhibition in every way complete.

The exhibition will probably be ready to be opened at the end of November or the beginning of December.

TESSERÆ.

Triumphal Arches.

THE first upon record who erected triumphal arches was Stertinius. He built an arch in the Forum Boarium, about B.C. 196, and another in the Circus Maximus, each of which was surmounted by gilt statues. Six years afterwards Scipio Africanus built another on the Clivus Capitolinus, on which he placed seven gilt statues and two figures of horses; and in B.C. 121 Fabius Maximus built a fourth in the Via Sacra, which is called by Cicero the Fornix Fabianus. None of these remain, the Arch of Augustus at Rimini being one of the earliest among those still standing. There are twenty-one arches recorded by different writers as having been erected in the city of Rome, five of which still exist:—1. Arcus Drusi, which was erected to the honour of Claudius Drusus on the Appian way. 2. Arcus Titi, at the foot of the Palatine, which was erected to the honour of Titus, after his conquest of Judæa, but does not appear to have been finished till after his death, since in the inscription upon it he is called Divus, and he is also represented as being carried up to heaven upon an eagle. The bas-reliefs of this arch represent the spoils from the Temple of Jerusalem carried in triumphal procession. This arch has only a single opening, with two columns of the Roman or Composite order on each side of it. 3. Arcus Septimii Severi, which was erected by the Senate (A.D. 207) at the end of the Via Sacra, in honour of that emperor and his two sons, Caracalla and Geta, on account of his conquest of the Parthians and Arabians. 4. Arcus Gallieni, erected to the honour of Gallienus by a private individual, M. Aurelius Victor. 5. Arcus Constantini, which is larger and more profusely ornamented than the Arch of Titus. It has three arches in each front, with columns similarly disposed, and statues on the entablatures over them, which with the other sculptured ornaments originally decorated the Arch of Trajan.

Water-Colour Painting.

Formerly, when nearly all painting was done in water-colours, the particular style was designated according to the vehicle or binder used with the water, or according to the method of applying the colours. Fresco (al fresco), gouache (a guazzo, with gums), and distemper (a tempera), are all water-colour painting; so also were some of the methods of encaustic employed by the ancients, for wax and resins can be rendered water-colour vehicles by being mixed with a soluble mineral alkali; soda is the most efficient, but it must be used as a nitrate, or some colours will be affected by it. Nitre, or nitrate of potash, will do nearly equally as well. Oil-colours, which have now nearly superseded water-colours, were not used for imitative art until the fifteenth century, when Van Eyck, by boiling linseed, poppy and nut oils with certain resinous mixtures, obtained a vehicle so much better adapted than any then in use for working, for effect and durability, that it was generally adopted by the artists of the period when it became known. What these mixtures were which Van Eyck used is not now known, but Vasari calls them a varnish which all painters had long desired. From this time what is called oil-painting became general, and the various methods in water-colour were proportionately neglected or employed only where oil-painting was a less convenient mode, as for theatrical and similar decorations, for which distemper (a tempera, that is, with an egg, yolk and white together) is better adapted. Water-colours are also better adapted for miniature painting, and illuminating books and manuscripts. For the latter methods different vehicles or media are required from those used in distemper. For distemper, glue, egg, milk and serum of blood may be used; in miniature and in water-colour drawing the media are more numerous—egg, gums, as gum Senegal, Arabic, ammoniac, and tragacanth, isinglass and borax. One-quarter of an ounce of gum tragacanth dissolved in one quart of a cold saturated solution of borax in water makes an excellent vehicle for miniature painting; a medal was awarded to Mr. J. H. Jones by the Society of Arts, &c., for its discovery. Animal gall and alcohol are also used in water-colour painting, the former to attach the colours to the ground, the latter as an antiseptic to preserve them from frost, mildew and putrescence. Saccharine substances should be avoided in water-colours, as they are attractive of damp and disposed to acid fermentation with gum. The artist should use only distilled water or filtered rain-water, for, says Mr. Field in his treatise on colours, "in all hard and impure waters colours are disposed to separate and curdle, so that it is often impossible a clear flowing wash or gradation of colour should be obtained with them."

Greek Sculpture.

The sculptured monuments left by the ancients may be aptly divided into three classes, viz. (1) Imitations not seldom transcripts of essential nature; (2) homogeneous delineations of character; and (3) ideal figures. Among the first are the great works of Phidias. In beholding them we say such is man, real unsophisticated man—man warm from the hand of nature, but not yet distinguished by her endless variety and difference of character. The Dioscuri of the Quirinal (the figures of Monte Cavallo), the Lapithæ in conflict with the Centaurs from the Parthenon, and the heroes from the fabric of Ictinus are brothers, and only differ in size and finish, whilst the Panathenaic processions offer the unvaried transcript of Athenian youth. Delineation of character forms the second class, and the distinguishing feature of its artists. They found that, as all were connected by the genus and a central principle of form, so they were divided into classes, and from each other separated by an individual stamp, by character. To unite this with the simplicity of the generic principle was their aim; the symmetry prescribed by general proportion was modified and adapted, not sacrificed to the demands of the peculiar quality which distinguished the attribute they undertook to personify. Thus, the Hercules of Glycon, though the symbol of absolute, irresistible and uniform strength, appears to be swift as a stag and elastic like a ball; and thus Agasias, the author of what the barbarity of custom still continues to misname the "Fighting Gladiator," though its style be more connected with individual than generic nature, has spread over its whole the rapidity of lightning, and substantiated in its motion all Homer says of Hector rushing through the shattered portals of the Grecian wall, that at that instant nothing could have stopped him but a god. The wounded Cornicularius, known by the name of the Dying Gladiator, the Savage whetting his knife to excoriate Marsyas, the enraged Shepherd Boy ludicrously transformed to a young Patroclus, are too undisguised portraits to deserve being ranked with this higher class of characteristic delineation. We with more exultation subjoin to it the pathetic groups which, to the historic artist, at once disclose the whole extent and limits of dramatic composition: the agonies of Niobe and her Progeny; the pangs of the Laocoon; Menelaus raising Patroclus, slain by Hector; the Warrior who deserves to be called Hæmon, with Antigone, self-slain, hanging on his arm; the softer and more familiar expression of Æthra and Theseus, maternal inquiry and filial simplicity; Orestes and Pylades pouring libations to Agamemnon's shade; Venus expostulating with Amor; Amor embracing Psyche. Works of different periods and different styles, but true to the same unerring principles—principles not abandoned in the lascivious dream of the Hermaphrodite, the gross sonorous repose of the Faun, and the tottering inebriety of Hercules. The artists of the third epoch concluded from existence to possibility. The simple purity of the first, and the energetic harmonious variety of the second period, were its bases. It amalgamated their artless angular line and rigid precision with the suavity of undulating contours, elegance of attitude, the soft inflections of flesh, and created a standard of ideal beauty which regulated the whole, from the most prominent, conspicuous and interesting to the most remote and minute parts. The Apollo, the Venus, the Torso, arose to prove that in the same degree as in an image of art the idea of simplicity, or of one, predominates, it will partake of grandeur; and that in the degree as the idea of variety prevails it will partake of beauty. Variety leads to simplicity in images of beauty, simplicity to variety in images of grandeur, and the union of both produces the sublime.

Rubens's Characteristics.

It must be admitted that in compositions where the predominant expression should arise from an emanation of the soul or the supposed operation of invisible agency—such inspiration as should illumine the countenance of holy persons or radiate that of the suffering martyr, who glories in being thought worthy to die for his faith—Rubens did not attain excellence. In all these his expression is purely human, occasionally elevated, but seldom dignified, and never divine. As his mind imbibed a strong impression of objects, so his pencil faithfully transferred them to the canvas, where their material forms, texture and expression are always depicted with a strength and energy that must ever delight the connoisseur. But that which has won all eyes to admiration is his resplendent colour, the superlative beauty of which has become proverbial; even Titian is compelled to divide with him the palm of superiority. From that master he acquired his knowledge of the harmony of colours, although he retained the Flemish manner of using them; from his predilection to the taste he acquired in the school of Otho Vœnius we may trace why his pictures are deficient in the chaste and solemn breadth of colour which distinguished those of his prototype, whose tints blend insensibly into each other, while those of Rubens, although brought together with equal propriety, being left pure, or only tenderly united with the pencil, require to be viewed at a suitable distance to conceal the manœuvre of the palette. When so viewed they present a rich and perfect union and such brilliancy and force as bear down all competition. His compositions, although frequently overcharged with objects arising from the fertility of his invention, are always skilfully grouped and united by intermediate links, presenting to the eye a curved line or the volution of a wreath, the whole being judiciously governed by due proportions of light and shade and exhibiting the effect of a rich cluster of flowers. To a profound knowledge of all the principles of the art he added that of being the most accomplished adept in its machinery of anyone that ever painted, and his rapidity of execution was only equalled by his extraordinary powers of invention. It is recorded of him that he performed as much in three days as another could complete in so many weeks. This astonishing rapidity was the cause of the frequent incorrectness in his drawing observable in many of his productions, the fervour of his genius not allowing leisure for reflection. These defects, however, did not arise from a deficiency of knowledge, as may be instanced in numerous pictures where the human frame is portrayed with most admirable correctness, the articulations being given with a precision that shows an accurate knowledge of anatomy. Neither are his female figures devoid of grace, although they often present what may be more properly styled the comely than the beautiful. His defects unquestionably proceed from early impressions, uncorrected by a due study of the antique until those impressions were so fixed in his mind that no after-study could remove them. It is sufficient, however, to be able to say that Rubens possessed a more universal genius, a more extensive knowledge of all the principles of the art, and a greater power in the practice of them, than any other painter who has hitherto existed.

GENERAL.

The Wallace Collection will not be open on Sunday during the remainder of the year. In the months of November, December, January and February it will be open every Monday at 12 o'clock instead of at 2 P.M. as hitherto arranged. To avoid inconvenience to the public it is desired to point out that children under eight years of age are not admitted under any circumstances. Under twelve years of age they must be accompanied by adults.

Mr. W. W. Astor has contributed 10,000*l.* to the Cambridge University Benefaction Fund. The total amount subscribed to the fund now amounts to about 67,000*l.*, in addition to 15,000*l.* which has been assigned by the trustees of Miss Squires's will to the building and furnishing of a law library. The minimum sum necessary to equip the University with the buildings and endowments which it requires is 500,000*l.*

The Rev. Raymond Palmer, D.D., passed away last Saturday. He was an enthusiast on historical and antiquarian research, especially on subjects connected with his native town of Tamworth. His works include "The History of the Town and Castle of Tamworth," "The History and Antiquities of the Collegiate Church of Tamworth" and "The History of the Baronial Family of Marmion, Lords of the Castle of Tamworth."

A Fête will be given by the French Academy of Inscriptions and Belles-Lettres on the 16th inst. in celebration of the fifty years of membership of M. Henri Wallon, who has held the office of secretary for twenty-seven years.

Notice has been served on the incumbent of the church of St. Andrew, Bordesley, Birmingham, requiring the building to be closed, as it is in an unsafe condition. It was erected about fifty years ago.

Mr. Halsey Ricardo will read a paper before the Liverpool Architectural Society on Monday next upon "The Revival of Gothic Architecture." It will be illustrated by limelight views.

The New Scientific Laboratories at King's College were formally opened by Lord Lister last Tuesday. The space for the new rooms has been gained by making the whole south wing one storey higher. There have also been great alterations in other parts of the building, including a new large lecture-hall for architectural students. The total cost has been 20,000*l.*

Sir John Evans will deliver the opening address of the 147th session of the Society of Arts on November 21. Professor J. A. Fleming will deliver a course of four lectures entitled "Electric Oscillations and Electric Waves," commencing on November 26. The first of the ordinary meetings will be held on December 3, when Major R. Ross will read a paper on "Malaria and Mosquitoes;" Professor H. S. Hele Shaw will take "Road Traction" as his subject on December 5; "The Treatment of London Sewage" will be dealt with by Professor F. Clowes on December 12; Mr. W. T. Maud will on December 19 describe "The Siege of Ladysmith."

Mr. P. H. Newman will read a paper before the Society of Designers on the 20th inst. upon "Design in the Future."

The Next Examination for certificates of qualification for appointment of sanitary inspector or inspector of nuisances, under Section 108 (2) (d) of the Public Health (London) Act, 1891, will be held in London on Tuesday, January 15, 1901, and the four following days. Particulars will be forwarded on application| to the hon. secretary of the Sanitary Inspectors' Examination Board, Mr. W. R. E. Coles, 1 Adelaide Buildings, London Bridge, London, E.C.

Mr. William Anderson, Professor of Anatomy to the Royal Academy of Arts, died on Saturday last in his fifty-eighth year. He was appointed in 1891 in succession to Mr. John Marshall. Mr. Anderson went to Japan in 1873, and during his stay of six years he studied the decorative and pictorial art of the Japanese. He also got together a valuable collection of Chinese and Japanese books, pictures, &c., which is now in the British Museum. He was, besides, the author of "The Pictorial Arts of Japan," "Japanese Wood Engravings" and other works.

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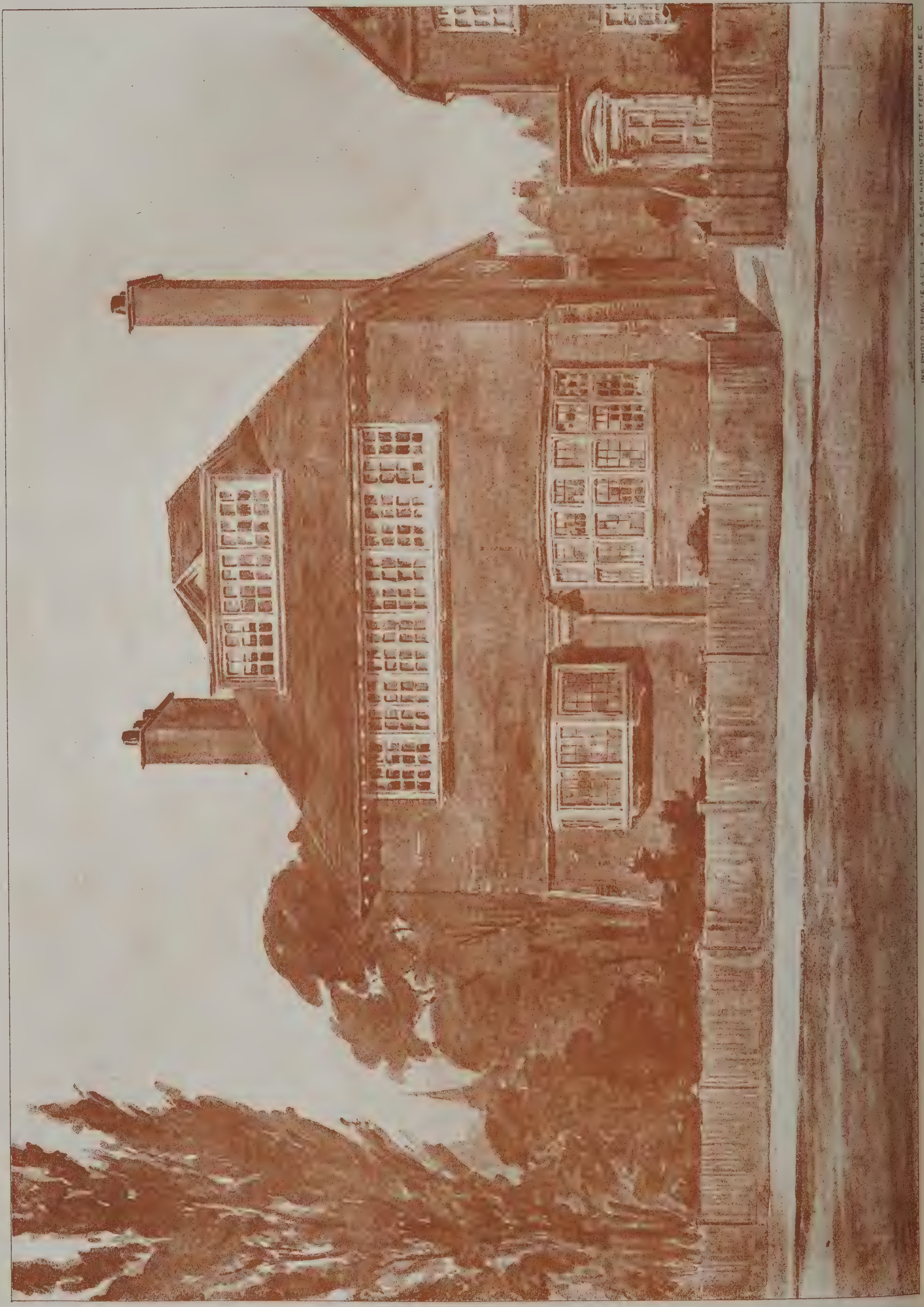

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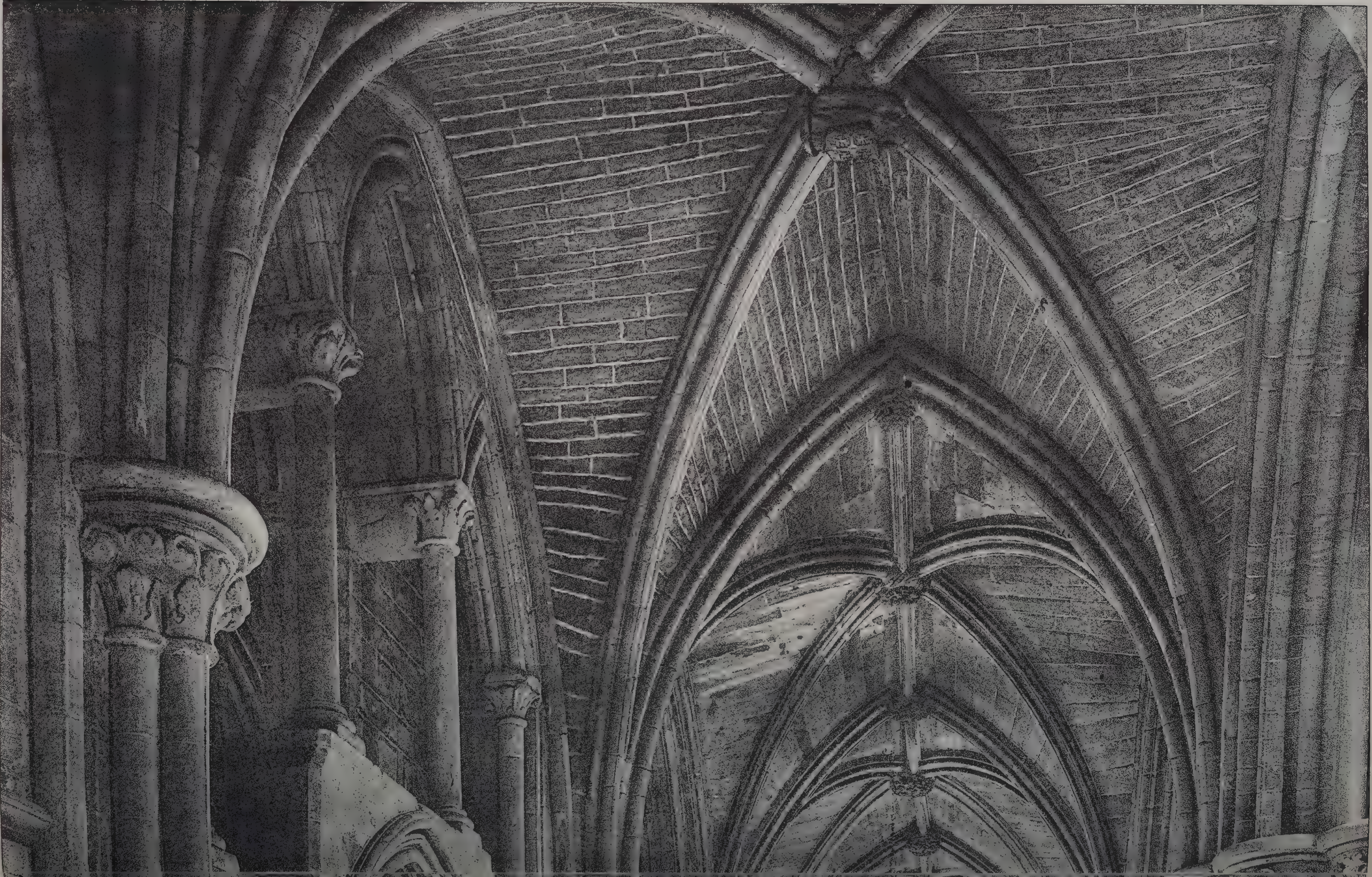

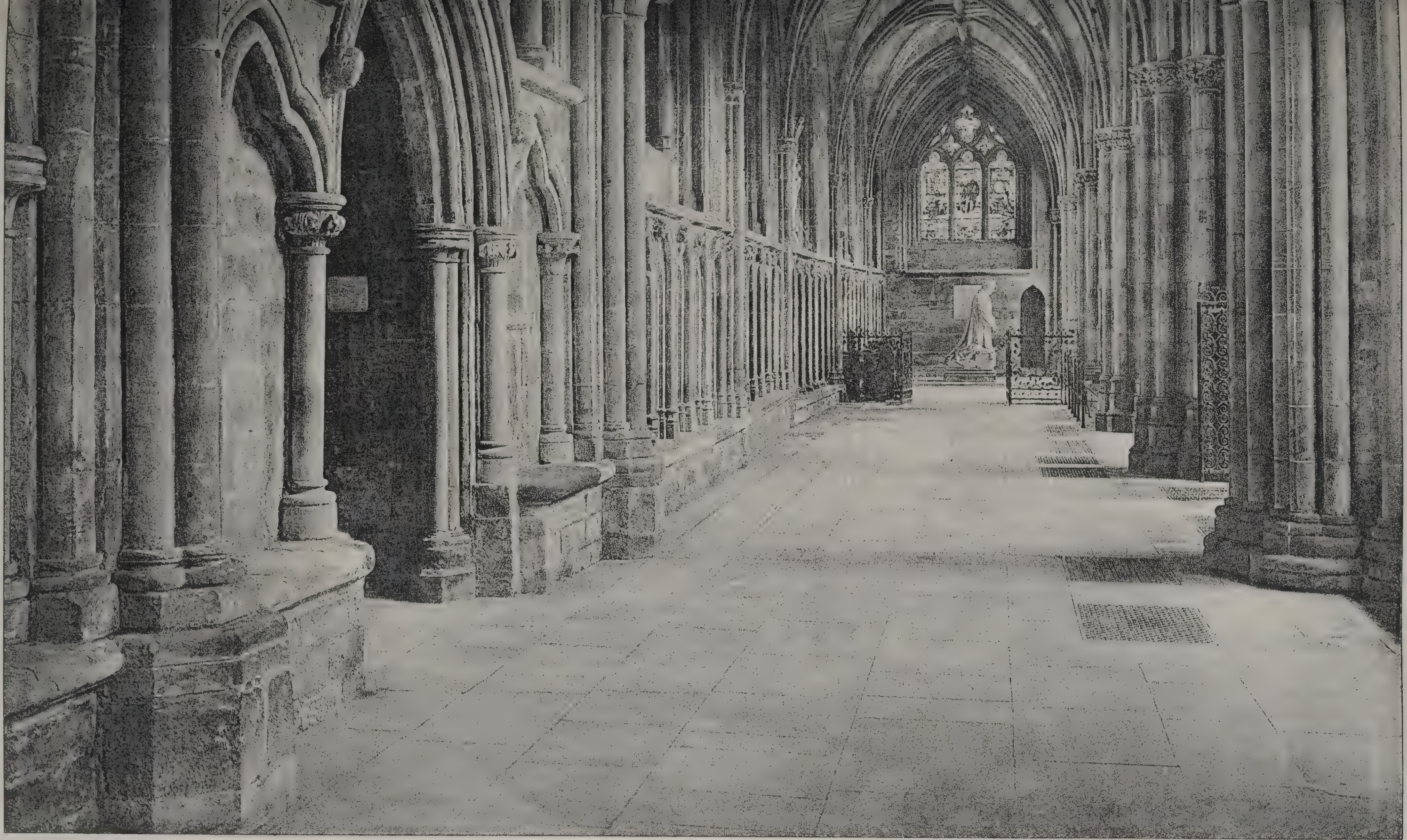

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CATHEDRAL SERIES, No. 305.—LICHFIELD: NORTH CHOIR AISLE SHOWING ENTRANCE TO CHAPTER-HOUSE.

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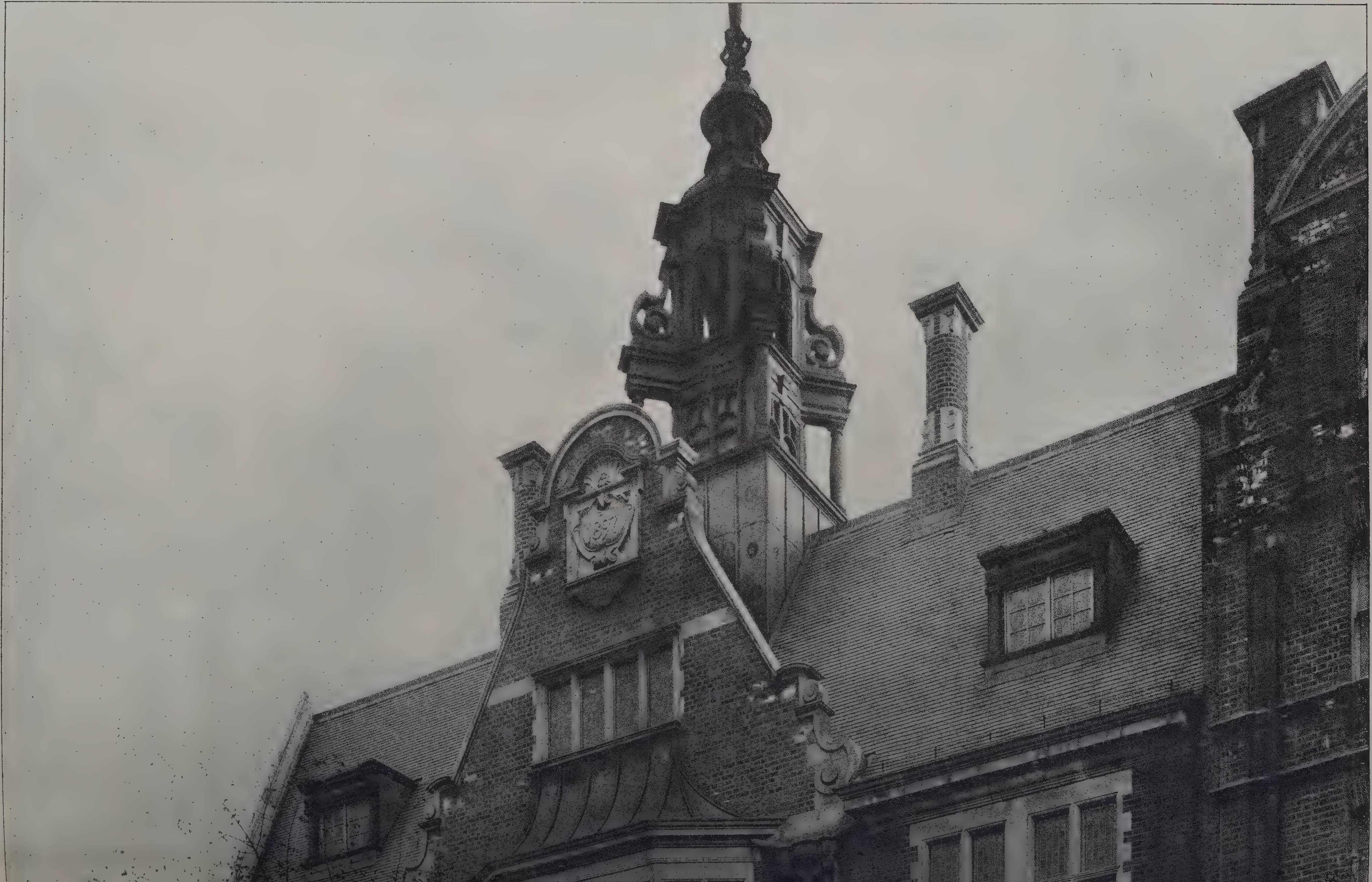

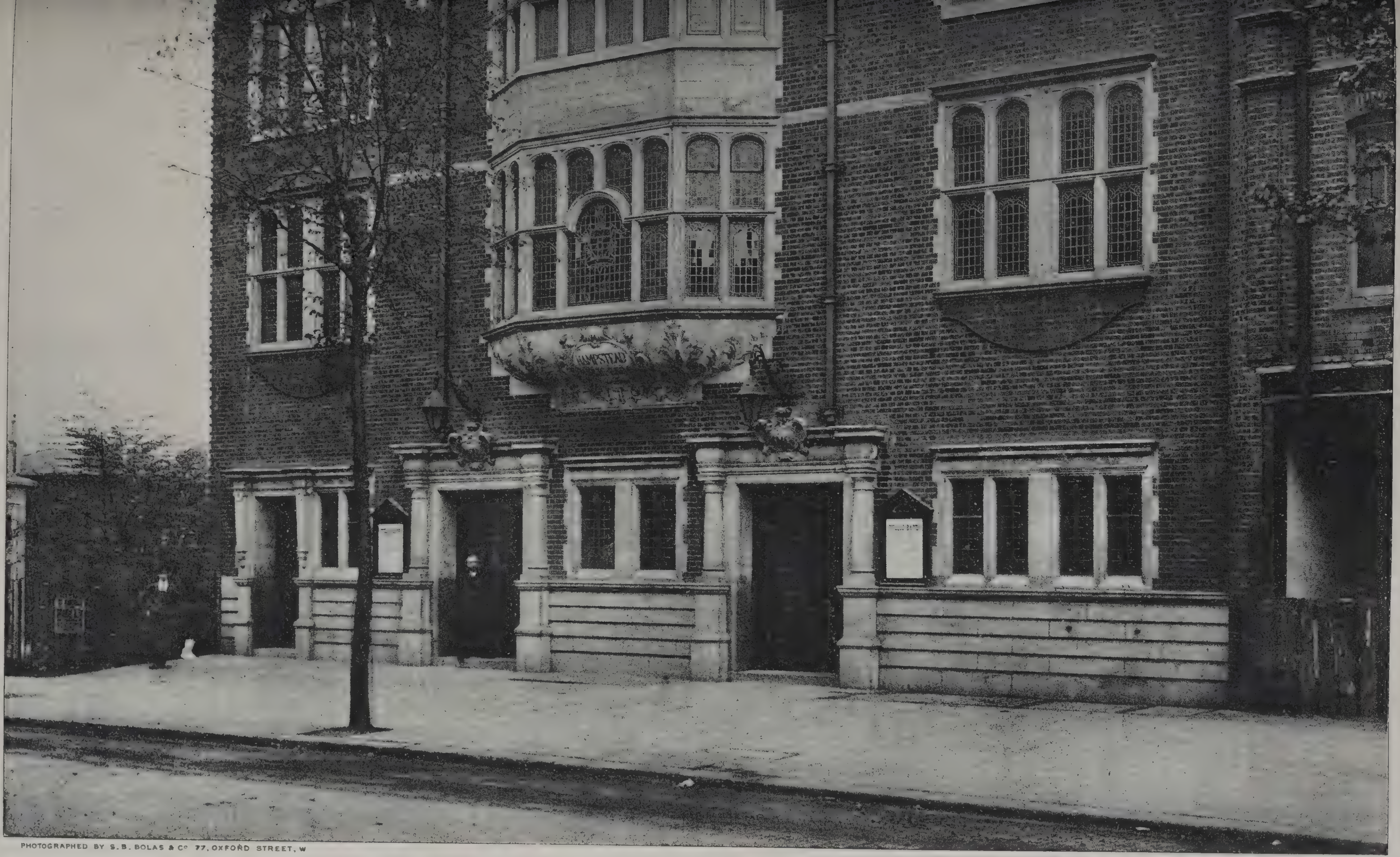

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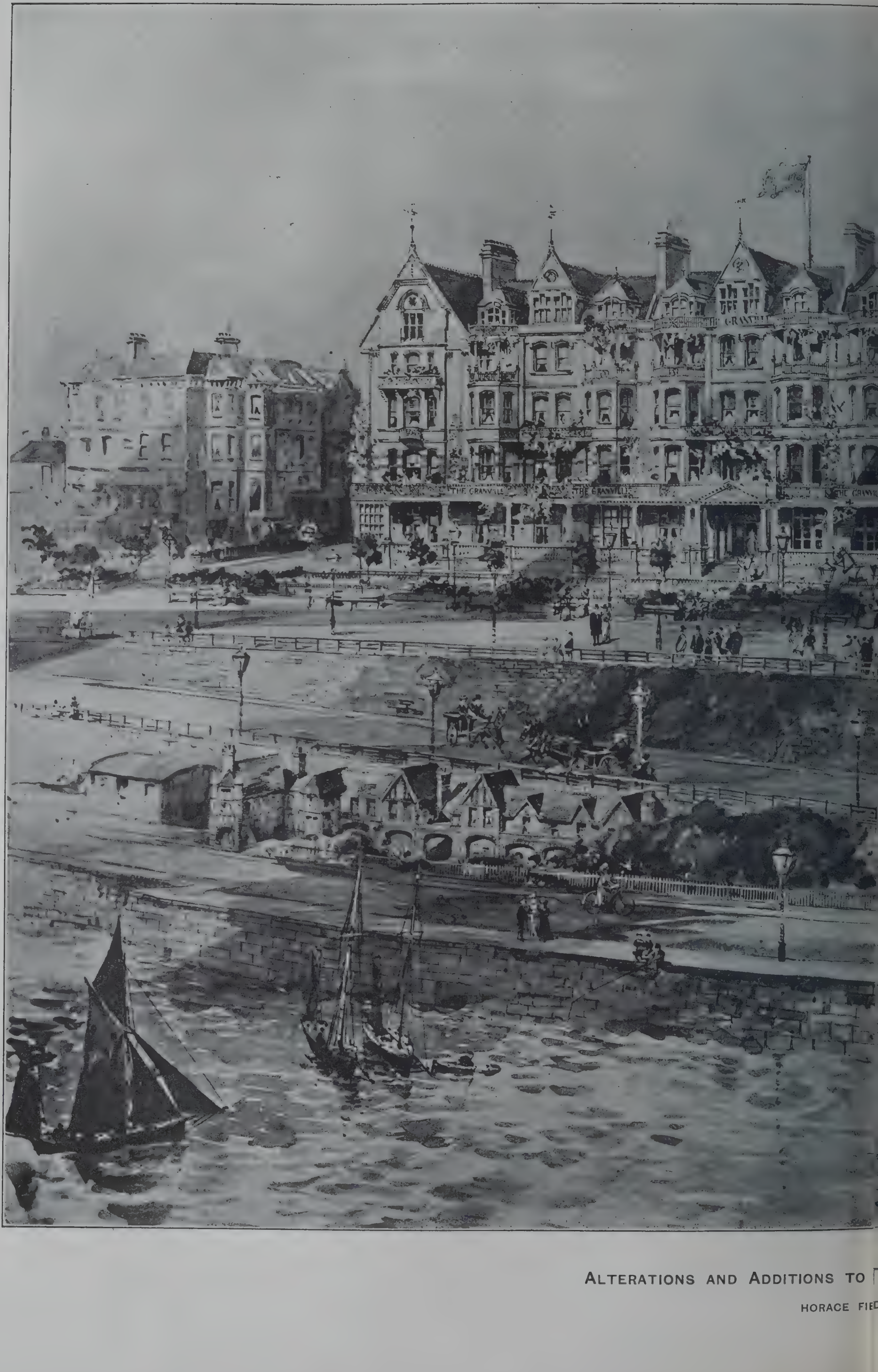

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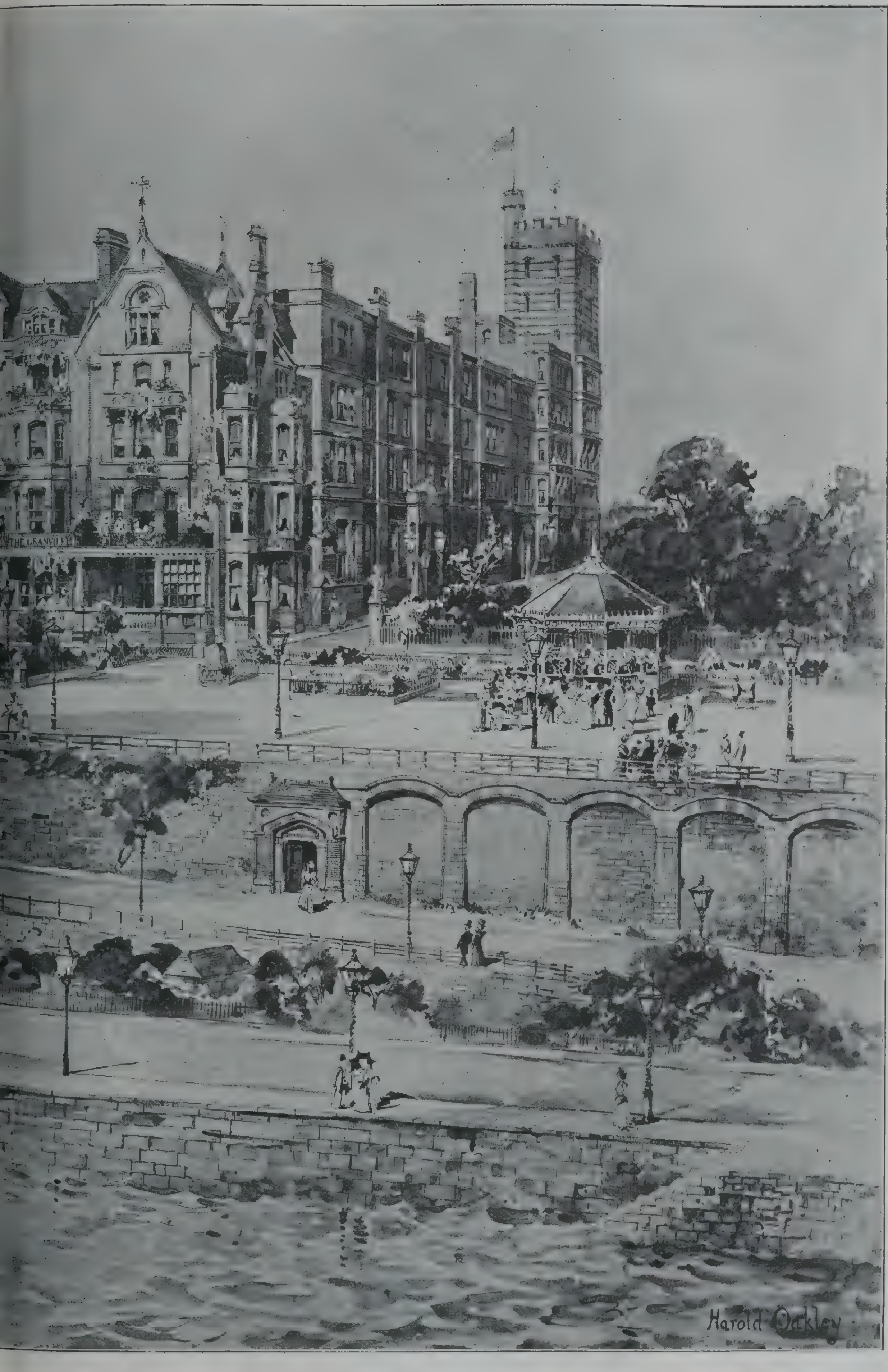

ANVILLE HOTEL, RAMSGATE.

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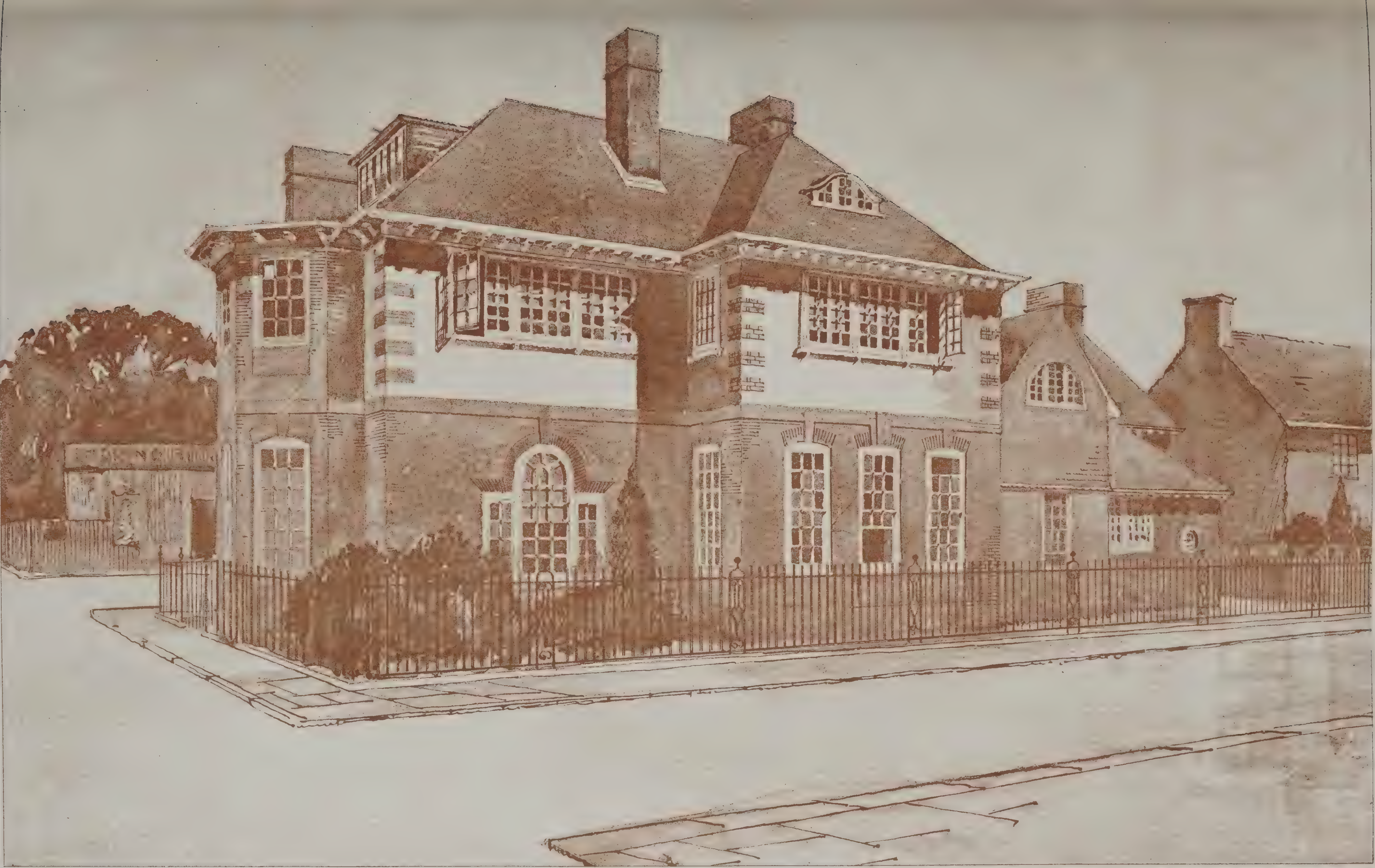

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St. Mary's Recreation Rooms, Putney.

SIDNEY PERKS, Architect.

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The Architect.

THE WEEK.

Professor Hermann Schaper, of Hanover, has obtained the commission for the decoration of the octagons in the cathedral of Aix-la-Chapelle. In order to possess all the desirable facilities for the execution of his important undertaking he has set up an atelier in the city. Already pictures exist representing some of the apocalyptic figures, and it is now proposed to increase the number by sixteen. The subjects will be the Blessed Virgin, St. John the Baptist, St. Michael, St. Gabriel and the Twelve Apostles. A model of the interior, showing all the proposed coloured decorations, has been prepared under the direction of the Professor and has been accepted by the Emperor. It is well known that the restoration of the building was accomplished mainly by the exertions of the Karls-Verein, a society that was organised to raise the necessary funds for the works. The painter has resolved to introduce portraits of several of the members among the figures which he has to execute. The question which, however, receives most attention at the present time relates to the carrying out of the figures in mosaic. Professor Schaper, like all artists charged with so important an example of decoration, would wish to have all his cartoons complete and of the required size before a start is made. But some members of the Union believe in a more expeditious arrangement. They wish to start at once with such cartoons as exist, and they would allow the mosaicists more latitude in dealing with their drawings. They consider excellent work can be produced from those which are not of full size, and in that way hope to secure some of the freedom which characterised the pictures of the early mosaicists.

If somebody proposed the removal of the statue of Mrs. Siddons from Westminster Abbey there would be a general outcry. It would be considered as an ancient monument which was to be protected at all costs by the Dean and Chapter. If we suppose the relief by John Henry Foley of Miss Helen Faucit had been set up in the sacrarium of Stratford-on-Avon's church soon after the sculptor's death its removal now would be considered as vandalism. The truth is, all monuments have no legal right to a position in a church, and the monument of Shakespeare which is said to dignify the sacrarium at Stratford-on-Avon is as much out of place as any other. Foley's work is a fine example of his genius in dealing with alto-relievo, and all the arguments which have been used during the past few weeks against its introduction can be applied with no less force to the portrait-bust which is Shakespeare's monument. To assume that by placing the relief in a position opposite the bust of the dramatist it was intended to suggest some equality between Shakespeare and one of his numerous interpreters was unfair to the memory of Helen Faucit, and casts a slight on the sentiments of her husband, the delicate poet and fine gentleman, Sir Theodore Martin. He has, however, as one effect of the outcry, withdrawn Foley's work. The power of association will in course of time make a monument appear to be a part of a church. But in a legal sense a monument of the most distinguished parishioner has no right to be introduced on the walls of a church. The approval of the ordinary has to be secured, and a lay rector has no more power than the humblest worshipper. Once erected a monument cannot be removed without committing an offence against ecclesiastical law. Where so much depends on individual approval, it is hardly fair to discuss the subject with the assumption that Shakespeare's monument, and it alone, is entitled to a place in the parish church of Stratford-on-Avon.

A few years ago an Irish architect declared at a meeting of the Institute that tons of rust were every week collected from the Britannia Bridge across the Menai Straits. Stephenson's tubular bridge, however, still stands. According to the New York papers it is now the turn of the colossal statue of "Liberty enlightening the World" at the entrance to New York Harbour, if the mass of rust can be taken as a test, to moulder away into nothingness. The endurance of the statue in that case must be brief, for it is made up of small plates of thin copper rivetted together and strengthened by means of light lattice girders. The sharp breezes and salt-laden air of New York may have a discolouring effect upon the surface and the patina may sometimes appear to have vanished, but it is not likely that the great statue should, after no more than fourteen or fifteen years, fall into a dangerous state. The duration of copper is remarkable, and the plates employed by the Paris founder, which were shaped to suit their positions by hammering on wooden moulds, appear to have been of excellent quality. To remove all apprehensions it might be well to protect the surface, and for that purpose the most effective and most pleasing process would be to gild M. Bartholdi's figure.

Although economy dominates in all the work of the Egyptian Exploration Fund, the outlay last year exceeded the income, fortunately by not a large amount. The total disbursements of the archæological survey during 1899-1900 had been 538*l.* 9*s.* The receipts had been:—(1) from subscriptions, English and American, 437*l.* 6*s.* 4*d.*; from publications, 52*l.* 16*s.* 11*d.*; from advertisements, 1*l.* 0*s.* 2*d.*; and from interest on deposit, 12*l.* 16*s.*—making a total of 503*l.* 19*s.* 11*d.* There was thus an excess of expenditure of 34*l.* 9*s.* 1*d.* over receipts. In the exploration fund the total disbursements for 1899-1900 had been 2,733*l.* 4*s.* 10*d.*, the expeditions account being 1,658*l.* 14*s.* 5*d.*, divided between the work at Deir-el-Bahari and Professor Petrie's expedition which was last year at Abydos, viz. 501*l.* 5*s.* 9*d.* for the former and 1,157*l.* 8*s.* 8*d.* for the latter. Mr. Howard Carter's reparation of the temple at Deir-el-Bahari was completed, and the fund owed him a deep debt of gratitude for gratuitously supervising the work, even after his appointment as inspector of antiquities. Professor Flinders Petrie, in his address at the meeting on Wednesday, called attention to the fact that the whole of this year's great results were a proof on the largest scale of the shameful futility of excavating by merely driving a gang of workmen. Everything that the Professor had brought to light, all the history that had been unfolded, had already been cast aside as worthless in the course of recent years' work on the bad old system. All that had been recovered after that wreck was entirely due to the trained eyes and the minute attention of men and boys who were individually looked after, and who were rewarded piece by piece for everything they found. It was nothing but the baksheesh system of reward for results which had recovered the first dynasty before our eyes, after the old style of mere compulsion had utterly failed to rescue a single historic evidence. The Professor said he had little doubt that in other sites which had been worked on the old defective ways there remained the greater part of the historic harvest yet to be reaped. The coming winter is to be employed at Abydos with explorations of the remaining royal tombs.

The following papers are to be read at the meetings of the Bristol Society of Architects during the session 1900-1901:—November 12, "The Architects of the Court and Capital of England in the Seventeenth Century," with limelight illustrations, by Mr. Harold Smith, A.R.I.B.A.; December 10, "Architecture Critically and Poetically Considered," by Mr. J. Atwood Slater; January 14, "Building Contracts from a Contractor's Standpoint," by Mr. Frank Cowlin; February 11, "Church Restoration," by Mr. C. H. Samson, F.R.I.B.A.; March 11, "Constructional Steelwork as applied to Building," by Mr. Archibald Dawnay, A.M.I.C.E.; May 13, "The Work of Alfred Stevens," with limelight illustrations, by Mr. John Fisher. The ordinary meetings are held in the Society's room, Fine Arts Academy, Queen's Road, Clifton.

THE INFLUENCE OF PALLADIO.

If any foreign architect or critic condescended to consider the recommendation of the London County Council about the adoption of a Palladian style for the new street, he would say that the English are as conservative in matters of taste as in constitutional affairs. From the books of Quatrèmere de Quincy and other authorities he must have been informed how Inigo Jones, Christopher Wren, James Gibbs, William Chambers, and many less renowned English architects found a second home for Palladian work in England, and that the master's plans were naturalised there. A host of authorities could be discovered to admire an architect who was described by a Frenchman as the Virgil, Racine, Fénelon and Raphael of the art. Indeed, so many eulogies have been bestowed upon Palladio it is difficult to ascertain what was his exact position among architects of the sixteenth century.

As he was born in 1518 he was one of the last of a long line of Renaissance artists. Apparently he belonged to a family in Vicenza that might be considered as of the middle class. Instinctively he was fascinated in his youth by the works of Vitruvius and Alberti, and through his mastery of their books he attracted the notice of Gian-Giorgo Trissino, the poet. He had a fellow-feeling with the young architect, for he was endeavouring to create a variety of Italian drama which would draw much of its inspiration from ancient literature. Trissino was a pupil of the Athenian Demetrius Chalcondylas, and from him imbibed the fine taste in literature which is seen in his works, and especially in the "Sophonisba," which was the first of the Italian tragedies on a regular plan. The poet made Palladio his companion during three or four visits to Rome, and the young architect was introduced to the intellectual aristocracy to be then found in the Papal city.

On his return in 1547 he is supposed to have commenced his career by taking up the Palazzo Publico at Udine, which had been commenced by Fontana, and who by some writers is said to have been Palladio's instructor in construction. But in his native place, Vicenza, his first work was the Basilica or Palazzo della Ragione, which was in the Italian-Gothic style. Palladio enclosed it with loggie or porticoes, and with so much success that nobody thought about the incongruity of combining styles so different. The arches spring from a minor order, the engaged columns giving stability as if they were buttresses or counter-forts, and in that way the principle of arched bridges is utilised on a small scale, and is an essential characteristic of his treatment. In those days it was inevitable that every renowned architect should in some way be associated with the works at St. Peter's at Rome. The fame which Palladio acquired by his treatment of the Ragione reached the ears of Paul III., who wished to have his advice about the operations which were then in progress. Before he was able to reach Rome the Pope was dead.

Among the phenomena which were to be witnessed in the days of the Renaissance, and even during its decadence, was a passion for the works of some particular master. In most cases the painters and sculptors reaped the advantages. But after what he had done at the Ragione the people at Vicenza were prepared to make many sacrifices in order to possess buildings designed by Palladio. It is to be regretted there was not a better material available than brick, and stone had to be kept for dressings. The Trissino Palace dal Vello d'Oro was one of his earliest efforts. The Folco or Franceschini was renowned for its simplicity. The Valmarana, the Porto-Barbarano Palace, the Chieracato Palace and the incomplete Tiene Palace were among his works in the town. A comparatively small house, which still bears his name, was, it is said, occupied by him. But it was never his property, as it was erected for the Cogolo family. In his residences Palladio recognised the necessity of subserving everyday requirements according to the mode of life which then existed. He has a claim to be ranked among the principal commentators on Vitruvius. But he was not disposed to sacrifice convenience in order that his notions of an ancient Roman villa should be realised at the expense of his clients. He seems to have arranged his plans before he undertook the preparation of his elevations, and it is evident from his writings that he possessed very definite ideas of the accommodation which a building should possess. Symmetry was prized by the Italians, and as they were willing to make sacrifices in order to secure it, Palladio had not consequently to face the difficulties which arise when the elevation of an English house becomes subordinate to the plan. But it is recognised that with all their symmetry there is more or less elasticity about Palladio's designs, and on that account they were selected, especially by Englishmen, to meet new ideas, in preference to works by his contemporaries or predecessors. When Goethe speaks of one of Palladio's villas being in perfect harmony with its enchanting environment he was only testifying to the adaptability which was characteristic of the master. It was on that account we suppose the County Council were recommended to take up the Palladian style. It is remarkable, however, that foreign writers had already stated that Palladio could not be properly appreciated in England, because the accessories he had in view and the lighting he could utilise were altogether unlike the nebulous atmosphere and the dingy surroundings which were regarded as unavoidable in England.

Vicenza might be supposed to be inadequate to display all the power of Palladio. He was summoned to Venice in order that he might take up works which Sansovino, owing to his age, was unable to direct. In that city he erected the church of San Giorgio Maggiore (of which it is said Albert Dürer was the original designer) and Il Redentore. It must be said that Palladio's Venetian buildings have not the scenic power which is usually associated with Venice. His style was too chastened, and he was afraid to let himself go, if we might use a modern expression. But when seen in the evening his Redentore has a solemn appearance which befits its purpose. According to Kugler, the best work of Palladio in Venice is an incomplete building behind the Academy. But to appreciate the architect's genius Vicenza is preferable to Venice.

Some critics have expressed great disappointment on seeing the theatre of Vicenza. The greater part was constructed after Palladio's death. It was not built for endurance, and it is only through the affection of the citizens for everything connected with the architect's name that it still stands. It is an archæological theory realised, for when Palladio prepared his plans there were no data existing which he could utilise. The structure was intended to serve solely for representations of the ancient Greek drama by members of the Olympic Academy. It is said that at the first performance of the "Œdipus" the part of the King was performed by Ludovico Groto, who was himself blind. His appearance will suggest the curious conditions which inspired the founders of the building, and the arrangements must not be tested by those in a modern playhouse.

According to Nicholas Breton, who was a contemporary of Palladio, the English merchant "from his eye observations brings the models of architectures." In the sixteenth century it is possible that profit was derived from bringing home drawings of beautiful buildings in Italy, and the negotiations with Italian draughtsmen were conducted by the merchants. Palladio, however, was not content with those arrangements, for he brought out a treatise on architecture which has been translated into many languages and which was for some time the accepted code in building. Goethe considered the four folio volumes to be indispensable for a traveller in Italy. In the beginning of the eighteenth century they were much prized in England. Lord Burlington paid a large sum for various papers by the architect. The villa his lordship erected at Chiswick was taken from the Italian's Rotonda Capra, and two other copies are said to have been erected in this country. Whether his buildings and his drawings were of advantage to imitators must always be a subject for speculation. In determining the value of his works it is difficult to preserve that moderation that is essential if a true judgment is to be arrived at. As a rule, Palladio is admired either too much or too little. Some critics being struck with the general effect, and seeing his avoidance of the extravagance which disfigured Italian buildings which were almost of the same age as Palladio's, have lauded his extreme temperance. On the other hand, like the majority of architects, his details are often weak, mannered and without expression. His single order, for instance, rarely imparts either strength or beauty to a composition. We can hardly believe that all his details were drawn by his own hand, and he was likely to have left much to foremen and builders. By bringing a number of examples of carelessness together it is easy to make out a strong case against Palladio. But, in spite of the defects of his works, there is much to be said for the German's opinion that, next to Michel Angelo, Palladio was the most influential master in modern architecture. In England we have reason to be grateful to him. His Italian architecture may have been cold and expressionless, but he was a better guide than such a man as Lorenzo Bernini or Borromini. From Palladio Englishmen were taught the value of measure, and that was a corrective of exceeding value, which atones for occasional weakness and insipidities.

ENGRAVING IN FRANCE.

ALMOST every year in France something is done to keep up the interest in the art of engraving. Not one, but all processes are encouraged. During the first French Revolution it was officially declared there was to be no exclusion in the varieties of the art, and the same spirit prevails to-day. Not only are medals and other distinctions conferred after exhibitions, but the State gives commissions whenever there are works likely to be produced which are supposed to be worthy of public support. The municipality of Paris has also generously purchased plates which have reference to incidents in the history of the city.

It must be allowed that in respect to the encouragement of engraving we are unable to sustain a comparison with France. Line engraving is declared to be a lost art among us. The last example, we believe, that could be considered as representative of so renowned an art was Doo's plate from *The Raising of Lazarus* in the National Gallery. A more expeditious mode of execution, and one which was perhaps more effective in dwelling-houses, was adopted for popular prints after paintings by Landseer, Millais, &c. Eventually etching came into favour. It is an admirable medium to express original thoughts or free translations of a picture, but it is doubtful whether it is adapted to supersede the process of line engraving or mezzotint as formerly practised. Etching, moreover, is so easily executed, examples abound in shop windows of pot-boilers which bring discredit on the art. It is therefore no wonder that so many people prefer photographic reproductions, especially when touched up by hand, to careless examples of etching. Admirable as are those reproductions, it should be recollected that they cannot compete with good etchings or engravings, any more than photography is able to take the place of painting. Every branch of art has its own province and its own limitations, and little can be gained by trespassing on other provinces.

Although Frenchmen hold so honourable a place in the history of engraving, the art was not taken up in France until several years after it had flourished in Italy and the Low Countries. The first engraver is believed to have been Jean Duvet, who worked in Paris about the middle of the sixteenth century. Perier, who was born in 1590 and lived until 1660, engraved a large number of prints after statues and other antique works. Callot, if he could be rightly considered a Frenchman, would have no rival as the first of the great etchers of the country. But he belonged to Nancy, in Lorraine. He led a wild life, but after the conquest of Nancy neither Louis XIII. nor the more omnipotent Richelieu was able to compel him to represent the taking of his native place. He said he would cut off his thumb rather than put his hand to a record of his Prince's defeat. Claude, the landscapist, was another native of Lorraine who etched excellent views. Sebastian Bourdon produced some fine etchings of scriptural and historical scenes. Abraham Bosse was one of the first artists to introduce popular prints. Then there was Jean Lepautre, who was known by his vigorous vases and architectural ornaments, which are still deservedly admired. But the two greatest of the seventeenth-century engravers were Charles Audran and Etienne Baudet, who were just the men who were adapted to execute the public commissions of Louis XIV.

That monarch can be easily turned into ridicule by modern wits. In patronising the arts and giving commissions Louis was no doubt only thinking of self-advertisement. But, whatever the motive, it produced magnificent results, and the king's patronage of engraving was a potent factor in popularising the art. In analysing the history of the time it is difficult to say what part in the creation of official engraving can be attributed to Louis and what part to Colbert. The king, at all events, duly obtained the credit for the resolution to form a collection of engravings, and his minister was proud to serve as the royal agent. In 1660 Colbert purchased the collection of De Marolles, which consisted of no less than 274 large portfolios containing examples of the art from the earliest period. From time to time other collections were added. Then in 1670 Louis decided to have a special series engraved by Audran, Leclerc, Edélinck and others, which would represent the battles, fêtes and other important events of his reign, as well as views of his palaces, fountains, pictures, statues, vases and medals. A liberal price was paid to the engravers. But the prints were sold so cheaply as to become a memorial of the king's liberality. The plates formed an illustrated *Court Newsman*, and every loyal citizen was expected to be desirous to possess a print of the battles and sieges in which the king was said to be risking his life for his subjects' welfare. Copies of most of those prints can still be picked up on the Quais of Paris. They are not only specimens of honest work, but they deserve respectful recognition, as they were among the first attempts to make engravings cheap. The very large series of five pieces, depicting the history of Alexander the Great, *i.e.* Louis XIV., were issued at 27 livres, and some of the prints were to be had for as low a sum as 6 sols or sous. It is remarkable that the new turn given to engraving was not admired by all the artists who practised it. The seal engravers, for instance, evidently thought they would be ruined if they were compelled to produce work on such low terms, and it was only by the interference of the police Audran and his associates were allowed to proceed with their pictorial chronicle of the reign of Louis.

Louis XV. was no less emulous to patronise engraving, although in a different manner to that of his predecessor. He was fascinated by botany, and there seemed to be no limit to the number of works he proposed to have published. One collection comprised 300 plates. Louis XVI. was also a lover of engraving and gave some commissions, but his reign was too short to reveal the extent of his liberality. The French artists were tardy in discovering the advantage of having memorials of their exhibitions. It was not until 1762 they began a series of plates from their pictures shown in the Académie Royale, forming a most interesting collection, which at once became popular. Another collection relating to sieges and military operations was undertaken by Sebastian de Ponteau, and 169 of the copper-plates found their way to the king. Twenty-nine plans were engraved representing the Invalides, but the most interesting part, those relating to the chapel, have disappeared; the remainder, however, still exist.

The copper-plates which belonged to the kings were seized by the nation at the time of the first Revolution. General Pommereul, who appears to have held an office nearly corresponding with that of Minister of Fine Arts, announced that a museum of engraving should become one of the glories of France. His scheme was received with favour by the heads of the Government as well as by artists. But disunion arose in realising his proposals. A depôt was finally set up in the Louvre from whence prints were distributed to schools and other institutions of Paris. It was found that for a time the new venture was a financial success. For example, Desnoyers was paid 200*l.* for his print from Raphael's picture called *La Belle Jardinière*, and in about a year prints to the value of 600*l.* were sold. That such a picture should be in demand in the revolutionary era is surprising, but it is always impossible to forecast what will be the popular subject with Parisians. We suppose the authorities were not pleased with the religious subjects and insisted on giving prominence to others of a different class. Whatever may have been the cause, the receipts of the depôt of engraving decreased year after year until at last they were less than the caretaker's wages. Napoleon, following the example of Louis XIV., gave commissions for the engravings of the bas-reliefs of his own campaigns which cover the shaft of the column in the Place Vendôme. When the Restoration period arrived thirty of the foremost engravers in France were employed to represent the coronation of Charles X. in a series of plates. During the reign of Louis-Philippe the king's favour was mainly bestowed on the plates derived from the military scenes in the gallery at Versailles.

Although the Republican Government of 1848 was short-lived, there was an ardent desire evinced to complete and extend the collection of engravings. But, contrary to all precedent, the authorities, instead of giving commissions for new plates, purchased what might be termed "job-lots" on a large scale. Rubens's allegorical pictures from the Luxembourg, of which the key to most of the subjects has been lost, forming twenty-seven plates, was one acquisition. Another was a collection of views of cities, palaces and châteaux in France by Rigaud, forming 121 plates. The most interesting of the purchases were the 126 engravings by Vandyke, known as his "iconography," of which the original sketches in oils were lately exhibited at one of the winter exhibitions of the Royal Academy. The interest taken in engravings by the Republican Government was so much in correspondence with the public taste when the Second Empire was constituted, it was resolved to go on with the work. Not only were plates purchased but no time was lost in giving commissions, especially for facsimiles of some of the precious studies by old masters in the Louvre collection. That was another lucky hit, for although Parisians were alive to the value of the national collection of drawings, only experts had taken the pains to go through the formalities which were required in order to have a glimpse of them. The Louvre was more accessible than the Print Room of the British Museum, which was sacred to Mr. Carpenter and his cronies. But in both depositories there was the conviction that private interests should not be sacrificed to gratify public curiosity. Napoleon III. on one occasion assigned 14,000*l.* for plates which were to be taken from some of the paintings in the Louvre. Nor can it be said that the existing Republic has been neglectful of its inheritance. From time to time plates have been ordered from the best contemporary masters of French engraving, and the interest taken has inspired many patrons of art to present valuable examples which were executed at their expense.

The Louvre must now possess a collection of copper-plates which would be sufficient, if popular enthusiasm decreed, to build as large a statue of Liberty as that in New York by M. Bartholdi. Most of the great Italian and French masters have at least some of their works in the storehouse. There are over 200 plates which were etched by the eighteenth-century amateur Comte Caylus. There are fifty plates by Comte Turpin de Crissé, chiefly consisting of views of Naples and its vicinity. One of the series relating to Raphael's works is made up of eighty plates. He is exceeded by Van der Meulen, to whose works 100 plates are devoted. No painter, however, obtained so much favour with engravers as Le Brun, for there are over 160 plates to give popularity to his works. Nicolas Poussin has inspired about 100 plates.

The number of plates relating to architecture is enough to show the admiration which Frenchmen have always expressed for the art. M. Lenoir, an architect, would appear to have had a commission to produce an engraving of every fragment of ancient work which was brought to light. His collection consists of nearly 300 plates. The Louvre, the Tuileries, Versailles, are all amply illustrated. The plates prepared by Baltard for his "Paris et ses Monuments" number more than 100. Then there are plates relating to various monographs on ancient buildings, and an immense variety of plans, sections and elevations of different public works. There are fifty-two plates of the Roman theatre and triumphal arch at Orange. The great collection of engravings undertaken in order to illustrate the expedition of the French army in Egypt under Bonaparte reaches the enormous total of 900, of which about one-half relate to buildings and antiquities.

There can be no doubt that France can show more governmental interest in the art of engraving than the rest of the world combined. The Vatican has no doubt an important department in which fine engravings have been produced, but the subjects selected for reproduction are limited, and in the days before photography was known the official engravings were not esteemed like those which were executed by masters who lived in Rome. Sundry attempts were made by the Germans to establish official engravers, but they were not successful, and that fate has also befallen the experiment made by the Antwerp Academy. In fact there is no comparison with that great school which Colbert organised for Louis XIV. It is true some of the works are by artists who are not Frenchmen. But a school which can boast of Audran, Masson, Desnoyers, Tardieu, Henriquel-Dupont, Lafevre, Salmon, Martinet, must be allowed to have perfected its system of organisation and teaching to an unprecedented extent.

ARCHITECTURAL CLASSICS.

In the last number of the *Architectural Review* (Bates & Guild Company, Boston) is an interesting article by Mr. Edward R. Smith on the principal architectural books. He maintains that no artist is so dependent upon books as the architect. Because the record of humanity in building its temples and habitations is preserved in books, and without books instructed practice in architecture is impossible. The following bibliographical notices are given :—

Greek Writers.

Silenus wrote a book on Doric symmetry; Theodoros described his great Doric Temple of Hera at Samos : Chersiphron and Metagenes wrote a treatise on the Ionic Temple of Artemis at Ephesos, an interesting book this would be for us now ; Pythios published commentaries on the Temple of Athena at Priene ; Iktinos and Karpion described the Parthenon at Athens ; Philon treated of the symmetry of sacred buildings and of the arsenal of the Peiraieus, an inscription enables us to reconstruct the arsenal of Philon ; Hermogenes described the Ionic Temple of Artemis at Magnesia and the Temple of Dionysos at Teos. Satyros and Phiteos published a work on the Mausoleum at Halikarnassos.

Latin Writers.

Vitruvius.—All that we know of this valuable architectural library is contained in the work of Vitruvius himself, which is largely compiled from these sources. According to his own account of himself, Vitruvius was an architect and military engineer who had not been unsuccessful in the practice of architecture. The only work of his own which is mentioned in his book is an unimportant basilica at Fano. An excellent restoration of this basilica has been made by Viollet-le-Duc in his "Entretiens sur l'Architecture." Through the patronage of a sister of the reigning emperor, undoubtedly Augustus, he was appointed to a public office, which brought with it the care of the balistæ, scorpions and catapults of the imperial artillery, and sufficient leisure for the compilation of his book. The book is undoubtedly a manual, written at the suggestion of Augustus, for his guidance in the reconstruction of Rome, which he intended to accomplish. It was dedicated to the emperor immediately after the battle of Actium (B.C. 31). Vitruvius knew nothing of the theatres, amphitheatres, temples and porticos which for us make up the great mass of Roman architecture. The Roman work described by him is the primitive practice of the time of the Republic. The book is loosely written It contains a kernel of architectural instruction, much incidental archæological information of value, some excellent notes on fresco-painting and the proportions of the human body, and an abundant husk of matter relating to Roman artillery and other affairs entirely irrelevant to any of the objects for the accomplishment of which the book purports to have been written. There is so much of this irrelevant matter and the book is so imperfect in a literary way as to draw upon it much destructive criticism. In its mildest form this criticism is expressed by Leake in his "Peloponnesiaca" (p. 129), when he says that the peculiarities of Vitruvius lead to the "suspicion that we possess no more than parts of the original work of Vitruvius, blended with productions of a later age." Much of the Latin is later than the time of Augustus. In reading the book one receives the impression that considerable portions have been written in by the various transcribers. The counsellor, C. F. Schultz, in a letter to Goethe, proposed the theory that the book of Vitruvius was compiled in the reign of Theodosius (b. about 346, d. 395 A.D.). This theory has been ably defended by Dr. J. L. Ussing in "Observations on Vitruvii de Architectura Libri Decem," a quarto volume published by the Royal Institute of British Architects in 1898. The theory of Schultz and Ussing has been refuted by Professor G. Baldwin Brown in an article in the "Journal of the Royal Institute of British Architects" (ser. 3, vol. 6, p. 149). The true value of Vitruvius lies in his account of the canons of Greek architecture as handed down in the monographs of the older architects already mentioned. This material is contained mainly in his third, fourth and fifth books. He gives an extended classification of the temples according to the arrangement of the columns as in antis, prostylos, amphiprostylos, peripteros, &c., and describes four orders—Doric, Ionic, Corinthian, and later in the book a Tuscan order. The manuscripts of Vitruvius refer to illustrations which have disappeared. Vitruvius seems to have travelled little and to have depended largely on literary sources of information. His system of proportion is frequently at variance with the actual facts, as revealed in the monuments. There is an excellent discussion of the work of Vitruvius in the article by Professor G. Baldwin Brown on "How to use Vitruvius," Journal R.I B A. for May 18, 1893.

With all its imperfections, the "De Architectura Libri Decem" of Vitruvius must be counted among the world's great books. It is the only art book which has lived over from the antique period It was, strangely enough, a favourite book during the Middle Ages, and all the existing manuscripts were transcribed during that time. The oldest of these is in the Harleian collection of the British Museum, and dates from the ninth century. That of St. John's College, Oxford, dates from 1316. Marini's edition of Vitruvius gives a list of fifty-three codices. The "Editio Princeps," or first complete edition of the Latin text of Vitruvius, is that of Johannes Sulpicius Verulanus. It has no title or index, but is supposed to have been published in 1486. The "Florentine edition" differs very little from that of Sulpicius. It has a title page, and was also printed in 1486. The "Venetian edition" is practically a reprint of the Florentine and bears the date 1487. The most celebrated of these early editions is that of Fra Giocondo, the famous engineer and architect who was associated with Raphael in the construction of St. Peter's in Rome. Giocondo's edition was published in 1511 with a dedication to Pope Julius II. The first of the important editions of Philander appeared in 1544. Between 1825 and 1830 was published at Utini (Italy) a great edition of Vitruvius in eight volumes with the commentaries of the Marchese Giovanni Poleni and Simone Stratico. The commentaries of Poleni, his "Exercitationes Vitruvianæ," first appeared in 1739-41 (3 parts in 1 vol. 4to). The most important of the editions of the text of Vitruvius with commentaries is that of Marini (Aloisius Marinius), published in Rome (1836, 4 vols. folio, 17½ by 12 by 2 inches). This superb work contains a complete bibliography to date of all the codices, texts and translations. In the foot-notes are to be found the variations of the manuscripts and an excellent commentary. The fourth volume contains the finest series of plates ever drawn for an edition of Vitruvius. The standard edition of the text alone is that of Valentinus Rose (Leipzig, Teubner, 1899, 12mo). This is usually bound with the "Index Vitruvianus' 'of H. Nohl.

Of the many Italian translations only the earliest will be given. That of Cesare Cesariano was published in 1521; that of Francesco Lutio Durantino in 1523; that of Gianbatista Caporali of Perugia in 1536, and that of Danielo Barbari in 1556. The earliest French translation is that of Jean Martin, which was published in Paris in 1547. Some of the illustrations of this book were drawn by the great sculptor Jean Goujon. The standard French translation is that of Claude Perrault, the architect of the great colonnade of the Louvre. It was published in Paris in 1673 (1 vol. fol. 17 by 12 by 1½ inches), and is a translation of the complete text with commentary in foot-notes, cuts in text and plates; quite a modern looking book compared with the magnificently picturesque Italian creations of the sixteenth century.

The oldest English translation of the complete text of Vitruvius is that of William Newton which was published in 1791 (2 vols. fol. 19½ by 13½ by 1¼ inches), an excellent old book with abundant commentary and fine plates. It is not so attractive as the beautiful "Civil Architecture Vitruvius," by William Wilkins (London, 1812, 1 vol. fol. 13½ by 11 by 2½ inches). This is a translation of the third, fourth, fifth and sixth books of Vitruvius, all that is of interest to the practical architect. There is no commentary, but each plate has a paragraph of explanatory text. Wilkins's is a fine office book with plates nearly as fine as those of the Marini edition. The "Architecture of Marcus Vitruvius Pollio," in ten books, by Joseph Gwilt (London, 1826, 1 vol. 4to), is a translation of the entire work, without commentary and with small plates. The great Roman encyclopædist, Varro, also wrote a treatise on architecture.

The "Historia Naturalis" of Pliny the Elder contains much valuable information about the history of important buildings. The greater part of what he has to say on the theory of architecture is taken from Vitruvius.

Frontinus.—The work of Sextus Julius Frontinus on the aqueducts of Rome may be mentioned, although it concerns engineering rather than architecture. Frontinus, a former governor of Britain, was appointed "curator aquarum" at Rome in the year A.D. 97. The text of his book "De Aquæductibus Libri II." was usually printed with the early editions of Vitruvius. The book is discussed at length by Rodolfo Lanciani in his "Topografia di Roma Antica (Rome, 1880, 1 vol. fol. 12 by 9 by 1¼ inches), and by Clemens Herschel in an interesting article on "Frontinus and his two books on the Water Supply of Rome," published in the "Transactions" of the Cornell University Association of Engineers (1894, vol. ii. pp. 15–54).

Procopius.—Procopius of Cæsareia was born at the beginning of the sixth century A.D. In the year 527 he was appointed secretary of Justinian's great general, Belisarius, and went with him on his campaigns. In 562 he was made prefect of Constantinople. Procopius wrote many important treatises, among them the "Ktismata," or "De Ædificiis conditiis vel restoratis Auspicio Justiniani Libra VI," which gives a contemporaneous account of the construction of the church of Aya Sophia and other important Byzantine buildings of Constantinople. The standard English translation of Procopius is that of Mr. Aubrey Stewart, published by the Palestine Pilgrims' Text Society (London, 1888, 8vo).

Mediæval Writers.

Wilars de Honecort (*Villard de Honnecourt*).—We must digress at this point to mention two writers of the Middle Ages. The great period which produced the Gothic cathedrals was entirely lacking in architectural literature. Practically the only Mediæval architectural book is an album of sketches by Wilars de Honecort which was preserved in the collection of manuscripts of the abbey of St. Germain des Prés in Paris. This collection is now in the Bibliothèque Nationale. The book contained forty leaves of vellum in the fifteenth century, but has now only thirty-three. It consists of a series of hasty sketches of plans of buildings, architectural details, figures from sculpture, stained-glass windows and the like. From internal evidence it is conjectured that Wilars was one of the leaders in the development of the architecture of the thirteenth century, and that he built the choir of Cambrai Cathedral, which was destroyed in the Revolution. The "Album of Villard de Honnecourt" was published in facsimile by J. B. A. Lassus (Paris, 1858, 1 vol. 4to). This book was translated and edited "with many additional articles and notes" by Rev. Robert Willis (London, 1859, 1 vol. 4to).

Theophilus (*alias Rugerus*).—The poet Lessing, while librarian of the Duke of Wolfenbüttel, discovered in his library a manuscript of the "Schedula Diversarum Artium" of Theophilus, and first brought it to public notice. The book is divided into three parts. Part I., "On the Art of Painting;" part II, "On the Manufacture and Painting of Glass;" part III., "Metal Work." The translation by Robert Hendrie, "Essay on Various Arts by Theophilus" (London, 1847, 1 vol. 8vo), lacks chapters xii, xiii, xiv. and xv. The text, annotated and with a German translation by Albert Ilg, is printed as vol. 7 of the "Quellenschriften zur Kunstgeschichte" (Vienna, 1879, 1 vol. 8vo). The description of the manufacture of glass in the second volume is especially interesting to architects. Theophilus is supposed to have lived in the twelfth century.

Renaissance Writers—Italian.

Alberti.—The first work of the Renaissance on architecture is the "De Re Ædificatoria" of Leone Battista Alberti (b. February 18, 1404, d. 1472). Alberti was a superb personality, resembling in many ways Leonardo da Vinci. He was a natural son of a Florentine gentleman of the Alberti family, and was born in Venice during the banishment of the Alberti. His father educated him perfectly. In 1432 the office of Scrittore ed abbreviatore delle lettere apostoliche was conferred upon him, and in this capacity he served six popes, Martin V. to Paul II. Alberti interested himself in the entire civilisation of the time. Architecture was only one of the many matters which attracted his attention. The question of his actual architectural practice is somewhat obscure. He is supposed to have been associated with Bernardo Rossellino in the reconstruction of the basilica of St. Peter's, which was attempted during the reign of Nicholas V. (pope 1447-55), and to have designed in Florence the Rucellai Palace, the chapel of San Pancrazio and the great portal of the church of Santa Maria Novella. He undoubtedly did design the façade of the Tempio Malatestiano at Rimini and the great church of Sant' Andrea at Mantua. Alberti always resided in Rome. The actual construction of his buildings was entrusted to competent assistants like Bernardo Rossellino, Luca Fancelli and Matteo Basti. Alberti was the first to compare Vitruvius with the monuments. The "De Re Ædificatoria" was first published in Latin without title page or index in 1485 (1 vol. 4to) after Alberti's death. It was translated into Italian by Cosimo Bartoli (Venice, 1565, 1 vol. 8vo). The French translation of Jean Martin was published in Paris, 1553 (1 vol. fol. 13 by 9½ by 1½ inches). The English translation of Giacomo Leoni, with Bartoli's Italian translation, was published in 1726 (London, 1 vol. fol. 17½ by 12 by 3 inches). The "De Re

Ædificatoria" is after all a rather rambling affair, with much less solid import than one expects to find in a book of such great reputation. The remark of Eugène Müntz may be quoted, "Cetouvrage, si souvent réimprimé, ne contient que des citations empruntées aux auteurs anciens ou des considérations absolument pratiques" ("Renaissance," vol. i. p. 363).

Leonardo da Vinci.—The manuscripts of Leonardo da Vinci contain many notes on architecture.

Filarete.—Antonio di Pietro Averlino (Averulinus), surnamed Filarete (b about 1400, d. 1469), sculptor and architect, assisted Lorenzo Ghiberti in the execution of the second door of the Florentine Baptistery and made the great bronze doors of St. Peter's in Rome. He was later cathedral architect at Milan and in 1457 began the Ospedale Maggiore in Milan. The "Trattato dell' Architettura" of Filarete is written in the form of a fiction. He supposes himself commissioned by Francesco Sforza, Duke of Milan, to build an ideal palace, the Sforzinda, and to instruct his heir in the rules of architecture. It is composed of interminable dialogues in twenty-five books covering a great variety of subjects. The book was written in Italian. There are ten Italian and six Latin codices. The "Trattato" has been published with a German translation and commentaries by Dr. Wolfgang von Œttingen in "Quellenschriften für Kunstgeschichte" (new series, vol. iii. 1890). Dr. Von Œttingen has also published "Ueber das Leben und die Werke des Antonio Averlino," in "Beiträge zur Kunstgeschichte" (new series, vol. 6, 1888).

Bramantino.—The personality of Bramantino does not appear to be clearly made out. The name is usually attached to a fairly well-known painter, Bartolommeo Suardi. A portfolio of architectural drawings in the Bibliotheca Ambrosiana at Milan is ascribed to him rather arbitrarily, and has been published in facsimile by Giuseppe Mongeri, "Le Rovine di Roma al Principio del Secolo XVI., studi del Bramantino" (Milan, 1 vol. 8vo, 1880).

Vignola.—The most important of the manuals of architecture published during the Renaissance period is the "Regola delli cinque Ordini d'Architettura" of Vignola. Jacopo Barozzi or Barozzio was born in the village of Vignola near Modena, Italy, in 1507, and after the Italian fashion has always been known by the name of his birthplace. He studied painting in Bologna, and about 1537 first appeared in Rome as a draughtsman employed by the Vitruvian Society, which was organised by the learned Cardinal Marcellus Cervinus. (Cervinus was pope for twenty-one days in 1555 with the title Marcellus II.) The object of the Vitruvian Society was the thorough study and careful measurement of antique monuments. In carrying out the wishes of his employers Vignola laid the foundation for the thorough knowledge of the grammar of ancient architecture which made him the first architect of his day, and his book the best architectural manual of his time. The fine title page of the "Regola delli cinque Ordini d'Architettura" has no date, but it was probably published in 1563 (1 vol. fol. 15 by 10½ inches). The text is engraved on copper-plates with the illustrations. This book of Vignola was the first to differentiate the five classical orders and to lay down their proportions with accuracy. The many editions and translations of Vignola usually treat the original with great freedom. The name Vignola has come to stand for almost any text-book on the five orders which in its general arrangement resembles the original book. The manual of Leveil, for instance, "Vignole; traité élémentaire pratique d'Architecture" (Paris, 1 vol. 4to), is based on the book of Vignola, but adds in its various editions whatever is required to make up a standard manual of Classic architecture. A portion of Leveil's manual, with the addition of the distinctively Greek orders, was edited by A. L. Tuckerman—the "Five Orders of Architecture according to Giacomo Barozzi of Vignola" (New York, 1891, 1 vol. 4to). An edition of Leveil is printed by the publishers of the *Architectural Review.* Another French edition of "Vignola" is that of C. Normand—"Le Vignole des Architectes et des élèves en Architecture" (second edition, Paris, 1836, 4to). An old English version is "Vignola: or the Compleat Architect, Shewing in a plain and easie way the rules of the five orders in Architecture . . . translated into English by Joseph Moxon" (second edition, 1655, 12mo). "Le due regole della prospettiva pratica" of Vignola was published after his death (Rome, 1583, 1 vol. fol. 14 by 10 by ¾ inches). It was edited by his son, Jacinto Barozzi, and Egnatio Danti, who wrote a commentary and added a life of Vignola.

Palladio.—Andrea Palladio was the son of a poor carpenter who had the good fortune to win the protection of the scholar and poet, Gian Giorgio Trissino (b. 1478, d. 1550). Andrea had no family name; the surname Palladio (from Pallas Athena) was given him by Trissino on account of his cleverness. Trissino gave him great advantages. Palladio enjoyed a large practice in Vicenza and Venice. Since his death his name has had as much prestige in England as that of Vignola has had in France, the name Palladian standing for the entire class of neo-Classic buildings based on the five orders. Palladio's book, "I Quattro Libri dell' Architettura" (Venice, 1 vol. 4to, 1570), describes the five orders, and contains much other matter on construction and general architectural subjects. There are many Italian editions. It was translated into French by Roland Fréard de Chantelon, Sieur de Chambray, "Les quatre livres de l'Architecture" (Paris, 1650, 1 vol. fol. 14 by 9½ by 1¼ inches). The "Œuvres complètes . . . Nouvelle édition . . . le tout rectifié e complète . . . par Chapuy . . . A. Corréard . . . et A. Lenoir" was published in Paris (1842, fol.). An English translation may be mentioned:—"The Architecture of A. Palladio in four books . . . to which are added several notes and observations made by Inigo Jones . . . revised, designed and published by G. Leoni," printed with the Italian text and the French translation of N. Dubois (London, 1715, fol.). Inigo Jones's copy of Palladio's "Architettura" with manuscript notes is in the library of Worcester College, Oxford. There is also the "Four Books of A. Palladio's Architecture," translated by I. Ware (London, 1738, fol.). Richard Boyle, Lord Burlington, the famous English architect, bought many of Palladio's studies of Roman monuments and published them under the title "Fabbriche Antiche designate da A. Palladio" (London, 1730, fol.). The drawings which relate to the Roman baths were published separately by Bertotti Scamozzi, "Le Terme dei Romani designate da Andrea Palladio" (Vicenza, 1785, 1 vol. 17 by 12 by 1 inches). There is a French edition by Achille Leclère and H. Roux Ainé, "Les Thermes des Romains d'André Palladio" (Paris, 1838, 1 vol. fol. 23½ by 17 by ½ inches).

Serlio.—Sebastiano Serlio (b. September 6, 1475, d. before 1555) was a pupil of the Sienese painter and architect, Baldassare Peruzzi. In 1541 he was made "Peintre et architecteur ordinaire" to François I., king of France, with his residence at Fontainebleau. He seems to have served as consulting architect, but was not allowed to interfere in the actual construction of the palace. His works on architecture are supposed to be based on the drawings and notes which he is known to have inherited from Peruzzi. He published his fourth book first, with the title, "Regole generali di Architettura . . . Sopra le cinque maniere degli edificj . . . Venezia, per Francesco Marcolini da Forli," 1537. The third book followed, "Il terzo libro di Sebastiano Serlio Bolognese nel quale si figurano e descrivono le Antichità di Roma . . . Venezia, per Francesco Marcolini da Forli," 1540. He published next the first book, "Le premier livre d'Architecture de Sebastien Serlio Bolognois, mis en langue française par Jehan Martin . . ." (Paris, 1545). The second book was published with the first, "Le second livre de Perspective de Sebastien Serlio Bolognois mis en langue française par Jehan Martin." The fifth book appeared next, "Quinto libro di Architettura di Sebastiano Serlio nel quale si tratta di diverse forme di Tempj" (Paris, 1547). The sixth book was published next at Lyon, "Extraordinario libro di Architettura di Sebastiano Serlio . . . trenta porte di opera Rustica mista con diversi ordini: e venti di opera dilicata . . . In Lione per Giovan di Tournes," 1551. Strada, the antiquary, bought Serlio's seventh book and published it after his death, "Il settimo Libro d'Architettura di Sebastiano Serlio Bolognese, nel quale si tratta di molti accidenti, &c. . . . Francofurti ad Moenum ex officina typographica Andræ Wecheli, 1575." Strada bought an eighth book on military architecture, which was never published. The works of Serlio were published in complete edition in Venice (1584).

Scamozzi.—Vincenzo Scamozzi, the great Venetian architect, a cotemporary of Palladio, published "Discorsi Sopra l'Antichità di Roma" (Venice, 1582) and "Dell' Idea della Architettura Universale di Vincenzo Scamozzi, architetto Veneto divisa in X Libri" (Venice, 1615, 1 vol. fol. 14 by 9½ by 2¼ inches). There is a modern edition by S. Ticozzi and Masieri (2 vols. 8vo, Milan, 1838). His sixth book has been translated into French, "Les cinq ordres d'architecture de V. Scamozzi tirez du sixième livre de son Idée générale d'Architecture, avec les planches originales" (Paris, 1685, fol.).

Sanmicheli.—"Li cinque ordini d' Architettura civile di Michele Sanmicheli" was not published until 1735 (Verona, 1 vol. fol. 13 by 9 by ½ inches). It contains parallels between the proportions of the orders as given by Vitruvius, Alberti, Vignola, Palladio, Scamozzi and Serlio. San Michele was the great military architect of the Venetian Republic, who built the splendid fortifications of Verona and many palaces in Verona and Venice.

Pozzo (*Puteus*).—The most important architectural book of the Baroque period in Italy is the "Perspectiva Pictorum et Architectorum" of Andrea Pozzo (b. 1642, d. 1709). He was probably a German named Brunnen, of which Puteus and Pozzo are the Latin and Italian equivalents. He entered the order of the Jesuits in 1665. Pozzo was both painter and architect, and devoted himself to the development of architectural illusions by means of perspective. His most important work of this kind is the decoration of the church of Sant' Ignatio in Rome. These perspective illusions were carried further and with finer artistic effects by his successors the Tiepolo of Venice. Pozzo's manual, "Perspectiva Pictorum et Architectorum" or "Prospettiva de' Pittori ed Architetti" (Rome, 1693 and 1700, 1 vol. fol. 17 by 11½ by 1½ inches) has title and text in Latin and Italian. Other Italian editions were published in 1723 and 1764. The English translation is "Rules and Examples of Perspective Proper for Painters and Architects in English and Latin . . . done into English by John James of Greenwich" (London, 1707, 1 vol. fol. 15 by 10 by 1½ inches). The "approbation of this edition" is signed by Chr. Wren, J. Vanbrugh and N. Hawksmoor. The work of Pozza was the most important manual of perspective in the eighteenth century.

Guarini.—D. Guarino Guarini (b. 1624, d. 1685), the Jesuit architect who built many churches and palaces in Turin in the extreme Baroque style, left an "Architettura Civile" which was published after his death (Turin, 1738, 1 vol. fol. 15 by 10 by 2). He wrote also on philosophy and mathematics.

Galli da Bibiena.—Ferdinando Galli da Bibiena (b. 1657, d. 1793). The most important member of the large family of Galli da Bibiena, architects of the Baroque period, who did so much to develop the modern type of theatre construction, published an "Architettura Civile" (Parma, 1711, 1 vol. fol. 16½ by 12 by 2 inches). He published also "Direzioni a' Giovani Studenti nel Disegno dell' Architettura Civile" (Bologna, 1745 and 1753, 2 vols. 12mo).

LORD GRIMTHORPE'S DILAPIDATION BILL.

A LETTER from Lord Grimthorpe has appeared in the *Times*, in which his Lordship says :—

I request your aid in making known in the only effective way to the clergy and others whom it may concern this revised version of the Dilapidation Bill which the *Guardian* printed for me on May 9, and which I was then able to say had been called by the most eminent present ecclesiastical judge "an admirably simple solution of a very difficult problem," subject, of course, to possible amendments of details. Since then I have sent type-written copies to the leading bishops, without whom no Bill for that purpose has a chance of proceeding; and, as I expected, I have got no kind of encouragement from them or intimation of any intention to do anything themselves. But I have lately heard from very good authority that some of the clergy have begun to run a scheme of their own, which is certainly as simple as mine, but in the opposite direction, for it actually proposes to levy a tax of one-fifth of the value of every benefice to be administered in doing repairs of church-houses by the very creature and creator of the Act of 1871, which the clergy have been justly denouncing for nearly thirty years, as I told them they would some day when they were at first receiving it with joy and expecting all benefit from it. It is pretty well known, and quoted in a life of Archbishop Thomson in the *Quarterly Review* of 1891, that I always called it "An Act for the relief of diocesan surveyors."

The simplicity of this Bill of mine comes from a different cause. Nobody seems to have perceived, before it occurred to me last year, that the only three parties interested in a dilapidation question are (1) the new incumbent, (2) the outgoing one or his representatives, and (3) the patron, who in a manner contains in himself the interest of all future incumbents, who will neither want a ruinous house nor an unduly large one. And they can all take sufficient care of themselves if they are allowed, and secured sufficient information of what is wanted and intended, and each of the three secured from improper bargains between the other two. As soon as that occurred to me the sky cleared, and I saw the way to a much simpler Bill than had ever occurred to me or anybody else as possible—except the above-mentioned summary enthronement of the diocesan surveyor as "monarch of all he surveyed."

With that short substitute for the so-called "memorandum" now usually prefixed for the information of those who have to turn Bills into Acts, but not of those who have to legally interpret them, and adding that the preamble recites the only other necessary facts, here it is :—

Preamble.

Whereas the Dilapidation Act, 1871, was reported by a Parliamentary Committee on a clerical petition in 1876 to have failed in its intended objects, but no attempt has yet been made to pass any other for the same purpose, or even to restore the old law, which was much better, as it allowed old and new incumbents to settle their own differences, as they often did, and the said Act is unduly expensive to the clergy; Be it therefore enacted (&c.) as follows :—

(Sect. 1) The said Act and all other enactments and laws inconsistent with this Act are hereby repealed.

(Sect. 2) In this Act the following words mean the following things :—"Benefice" means any ecclesiastical office to which is attached a house or other buildings which the owner thereof, herein called "the incumbent," ought by general law to keep or leave in good repair. "The late incumbent" shall include his legal representatives.

Where Her Majesty is patron, the Minister whose duty it is to advise on the exercise of such patronage shall act on her behalf. When a corporation or other plural body is patron, their head thereof or any member or officer appointed for the purpose shall act for them. An infant patron shall act by his guardian.

Whenever the Lord Chancellor is satisfied that further rules are needful as to procedure or costs under this Act, he and the Provincial Judge or Dean of Arches shall make such rules, which shall then be treated as if they were contained in this Act.

(Sect. 3) Whenever a benefice has been vacant for a month the patron may, by himself or some person authorised by him in writing, inspect the buildings thereof, without doing any damage or unnecessarily disturbing any of the family of the last incumbent still residing there lawfully, and if any such damage or disturbance takes place the patron shall compensate the parties injured thereby.

Any agreement made between two of the aforesaid parties, the incoming and the outgoing or last incumbent and the patron, to the prejudice of the third, shall be void and not acted on under a penalty of 50*l.* if sued for by the third.

(Sect. 4) As soon as an incumbent is in lawful possession of his benefice he may prepare and send to the patron in a registered letter and to the diocesan registry a full description of the repairs and alterations (if any) which he proposes to do, and, subject as hereinafter mentioned, may proceed with the same unless the patron within a month after receiving the said description objects to any of the proposed alterations being made without a faculty, which he may oppose in court. If his opposition succeeds the disallowed alterations shall not be made under pain of the living becoming vacant if the patron claims it, and an injunction against proceeding with such works.

But if the patron has not objected within a month, or if the faculty is granted, the incumbent may proceed with the alterations as well as the repairs at his own expense; and when he has either paid or contracted to pay for them he may claim from the last incumbent so much of the cost of the works as he thinks himself entitled to for *bona fide* repairs only, with a statement of the grounds of such claim verified by affidavit, and shall send the same or a copy thereof to the diocesan registry, and such statement and affidavits in answer and replies as the parties think fit shall be submitted to the diocesan Chancellor for his decision thereon and on the costs. And his decision shall have the same consequences as if it had been given in an arbitration under a rule of Court.

This Act may be cited as the Dilapidation Act, 190—, and shall come into operation on the —— of —— next.

Note.—I had added a right to appeal to the Provincial Court on the same documents; but I dropped it on remembering that every faculty case (which are analogous to what these would be) during the twenty-one years that I was Chancellor of York was tried and decided by previous agreement between the parties on the written documents only and no appeal was ever asked for, though it was not always precluded by the agreement.

Moreover, the Lambeth committee of bishops and lawyers of all degrees on my Clergy Discipline Bill, which became the Act of 1892, after much discussion agreed to allow no appeal without a previous decision by the Judicial Committee that a *prima facie* case for it had been established to their satisfaction, which it was in one instance in this diocese, and the judgment of the Chancellor was reversed. Such cases as these would be obviously of far less consequence to the parties than those which may end in deprivation; and building claims are notoriously costly in litigation. Therefore I am sure the Bill is better without having provision for an appeal either about faculties or the amount of dilapidations under it or the costs. No other alteration of the Bill has been suggested to me either by hostile or friendly critics, and I am sure none is required, though I have no expectation of living to see any such Bill passed.

The Church of St. Basil, in Heath Mill Lane, Deritend, has been reopened, after being closed since February to allow of the entrances being widened and improved. The work was undertaken at the initiative of the borough surveyor, and has involved considerable structural alterations, from which both the Sunday school at the back and the meeting-room beneath the church will benefit. A wide staircase now leads up into the church from the front of the building, and the passage by the side which leads into the Sunday school is twice as wide as before. To complete the improvement a bell has been hoisted at the rear to summon the parishioners to their devotions.

NOTES AND COMMENTS.

The loss of an architect in the maturity of his power is not to be regarded lightly, but there were circumstances in the life of William Young which add to the pathos of the event. He had to force his way to success through most adverse circumstances. When he came to London he was possessed of neither friends nor interest, and he appeared to be destined to become one of the auxiliaries of more fortunate architects. He hired a small office in Exeter Hall, but clients did not ascend to him. Fortunately for himself he became a member of the London Scottish Volunteers. The lieutenant-colonel, Lord Elcho, had noticed him, and broke in on his solitude. By his influence William Young obtained a commission for a regimental refreshment-room at Wimbledon. That work led the way to others. He was, however, a solitary by disposition, and when he succeeded in the competition for the Glasgow Municipal Buildings there was general surprise. All that could be discovered about his practice in Scotland was that he had prepared designs for some of the iron manufacturers. Competitions do not teach forbearance or kindly feelings, and an effort was made to deprive William Young of the prize on the ground of his being no more than a trade designer. Happily, Glasgow was spared the discredit of so unjust an act. William Young was able to remodel the Scottish mansion of his first patron, who had become Earl Wemyss. For the Earl of Cadogan he designed Chelsea House, as well as several houses on the estate. The improvements in Lord Iveagh's house, including the great ball-room, were carried out by him, and he possessed the confidence of several peers. There was no surprise when it was found he was entrusted with the works of the new War Office, although his plan was not approved by Lord Wemyss, who was ambitious to see Inigo Jones's design for the Whitehall Palace turned to account. During the enforced leisure of his career in London he compiled a useful collection of tables and other memoranda, which is now known as Spons's "Architects' and Builders' Price Book," as well as a collection of designs for town and country mansions, and a series of picturesque architectural studies. At the time of his death William Young was in his fifty-seventh year.

Behind the Hôtel de Ville of Paris is a Lutheran church which was once known as the Church des Carmes-Billettes. It dates from 1754, and is not of much architectural interest. But an older church stood on the site, which was erected probably in the fourteenth century. The cloister north of the church alone remains, and is prized by lovers of Mediæval art. It is now about to be restored at the expense of the Municipal Council. According to tradition, a wealthy Hebrew possessed a house in that part of Paris. But for some act of irreverence he was deprived of his goods, which were assigned to the Church. A part of the wealth was applied to the foundation of a convent, which was not suppressed until 1790. It was occupied by a branch of the Carmelite Order known as the Carmes-Billettes, from the character of the scapular worn by the members.

The annual report of the Howard Association, among other philanthropic subjects, deals with the housing of the poor. The theory of the committee is that their duties should be enforced on owners, and not imposed upon ratepayers. The Berlin improvements, as Mr. Horsfall observes, were not made by wasteful "blocks" at the ratepayers' cost, but by insisting on the duties of house-owners. Mr. Thomas Blashill, architect, has also been in communication with the Association on the subject. He says:—"It costs over 50*l.* a head to clear out unhealthy areas. (In some provincial cities it costs 80*l.* or more per head.) Practically nobody is rehoused. They overcrowd other areas. The system is wrong. We ought not to buy people out or to compensate owners. When an area is declared insanitary put the heaviest penalty on the admission of any fresh inhabitant and proceed to clear the area by finding accommodation for the inhabitants as near as possible. It would not cost 12*l.* 10*s.* per head, probably not half so much. Let the owners make the best of their land for any purpose so long as no insanitary houses are allowed to remain or to be rebuilt. If you want to combine a street improvement buy the land in the usual way. If the owners are many, and their sites small, so as not to be individually suitable for new buildings, enable them to form a trust or syndicate which would improve the property, and sell or let it for new buildings—pooling the value of all the areas, and in the end dividing the proceeds according to the interests of the respective owners. This plan would make the property valuable, without any sacrifice of its value. It is this value, at present lost, which would enable the owner to carry out the improvement, and its retention forms the backbone of this scheme. The complicated system of ownership which the law allows is no affair of the local authorities. It is the concern of the owners." As to cleansing, Mr. Blashill writes:—"We might imitate the practice in the admirably-managed city of Berlin. There, if the staircase of a tenement house is kept dirty the Fire Brigade is sent to cleanse it, and the landlord has to pay the cost. If the tenement is kept dirty it has to be vacated while being cleansed by a similar process."

The fourth edition of Mr. E. S. Roscoe's "Digest of Cases relating to the Construction of Buildings" (William Clowes & Sons, Limited) is slightly larger than the third. It contains some new cases, viz. Chambers *v.* Goldthorpe (in which was affirmed the non-liability of an architect for negligence in giving a certificate), Whipham *v.* Everitt (architect's fees), Marshall *v.* Mackintosh (breach of agreement to build), Restall *v.* Nye (right of architect to act as quantity surveyor). Most of the additional cases arose during the present year. The pages contain an abstract of the law on the relations between architects, builders, building owners and quantity surveyors, forms of contract and other documents, precedents of pleading, &c. In a limited space the essentials of the law of buildings are comprised, and from the arrangement reference to any of the subjects involves no loss of time. The possession of such a handy volume may often prevent costly litigation, and a knowledge of the contents should be imperative on all architects.

The old-established and well-known business of Mr. William Griffiths, of London and Guernsey, granite merchant, paving contractor, &c., is about to be formed into a limited company, in conjunction with the business of Mr. William Stranger, quarry owner, of Guernsey. This arrangement will secure a practically unlimited supply of Guernsey granite to the English market, nearly two million tons of rock lying above the present working level of Mr. Stranger's quarry. The capital of the company is to be 200,000*l.*, in 5*l.* shares. There is every reason to expect that a large dividend will be paid. The prospectus will shortly appear, and is worthy of attention by our readers.

ILLUSTRATIONS.

THE LONDON COUNTY COUNCIL HOLBORN AND STRAND IMPROVEMENT.—DESIGN NO. 17: STRAND "ISLAND" SITE, ADAPTED FOR MUNICIPAL BUILDINGS. COMMERCIAL TREATMENT ON THE NORTHERN AND SOUTHERN SIDES OF THE SEGMENTAL STREET. NEW GAIETY THEATRE, HOTEL AND RESTAURANT. HALF OF THE NORTHERN SIDE OF SEGMENTAL STREET, AND TREATMENT OF SALIENT ANGLE TO THE HOLBORN THOROUGHFARE. NEW "MORNING POST" OFFICES.

We publish this week a complete series of reproductions of the drawings constituting one of the designs submitted in the competition for the first part of the Holborn and Strand improvement. As in our article criticising the designs, we have followed the numerical order assigned by the authorities, and in that way No. 17 obtains the first place. The remaining designs will appear according to the same rule.

In our last issue we published a photograph of the front elevation of the Hampstead Public Baths, and in error gave the names of Messrs. Spalding & Spalding as the architects. We are informed that the design for the front elevation was designed by Mr. Alfred W. S. Cross, of 58 Conduit Street, W. At the time the design was accepted Mr. Cross was in partnership with Mr. Henry Spalding. We greatly regret that the mistake should have occurred.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE first general meeting of the session 1900-1901 was held on Monday evening last, Mr. William Emerson, president, in the chair.

The President said it was a matter of very great regret that he had to announce the death of Mr. William Young, a very eminent member of their profession. Mr. Young had a very large practice in the country, and he had built for nobility and gentry. He was also one of the architects selected for the new Government offices.

The Hon. Secretary announced the decease of Mr. Joseph Goddard, of Leicester, Fellow since 1871, and Mr. Charles Henry Driver, of Westminster and Clapham, a Fellow since 1872.

The decease of Mr. Lloyd Tayler, of Melbourne and Sydney, was also published.

The Secretary announced that at the statutory examination held on October 25 the following gentlemen had passed, and had been granted the certificate of competency to act as district surveyors under the London Building Act:—Herbert A. Legg, of Christ's Hospital, and Richard D. Hansom, of Dulwich.

Mr. Aston Webb, A.R.A., said it was a very interesting purpose which led him to intervene between the President and his address. It was none other than to ask the Institute to accept from some subscribers a portrait of their past president, Professor Aitchison, R.A., painted by Sir L. Alma-Tadema, R.A. Lord Beaconsfield had written, when looking about for a suggestion for the improvement of architecture, that it would be an excellent thing if an architect were shot. They had never seen their way to carry out that suggestion, but they had always contrived to have their past presidents hung. The name of Professor Aitchison was a household word, and it was unnecessary to say very much about him. All knew the delicacy and refinement of Professor Aitchison's work, and his power and sense of colour, and they also appreciated his great antiquarian and archæological knowledge. Combined with all those higher architectural qualities, their past president had been a most excellent district surveyor, and in this capacity he had been most useful to his profession. Mr. Webb finished by expressing the subscribers' great thanks to Sir Alma-Tadema, and their appreciation of his work.

The President formally accepted the portrait for the Institute, and again thanked the artist.

Sir Alma-Tadema briefly replied.

The PRESIDENT then delivered the following

Opening Address.

On taking this chair at our first sessional meeting of the twentieth century, the sixty-sixth in our annals as a chartered institution, I find it difficult to express in suitable terms my high appreciation of the honour of being again elected to the office of president. I can only say it shall be my most earnest endeavour to advance the interest, promote the welfare and enhance the influence of the Royal Institute of British Architects and to uphold the dignity of the profession.

Our session which commenced last November and ended last July was the last of the nineteenth century, and I then thought it opportune to review the architectural work of the century, its present aspect, its shortcomings, its vitality, and to consider what signs there are of the development of a characteristic national architecture in the future. The twentieth century may be an epoch of extraordinary evolution. May it not be an epoch in the history of the art of architecture?

There are many signs of quickening vitality in the architectural world, pointing to a new development. Should this be the case it is but natural to suppose that the influence of the Royal Institute of British Architects on the profession, and through its members on the general public, will be a most important factor. A hundred years ago there was no Institute of this kind in connection with architecture in the United Kingdom. We received our Charter sixty-four years ago, when there were only 182 members enrolled. We now number in the various classes of membership a total of 1,745. Besides this, in our seventeen Allied Societies in the provinces and colonies, we have over 850 architects in federation with us, making in the aggregate nearly 2,600 members. This speaks volumes for the extended and increasing influence of the Institute. If all these units imbued with a proper and unselfish interest in the cause of architecture are in the aggregate working with any enthusiasm at all—and this no one can doubt who knows what is going on in the profession—I think I cannot be wrong in prophesying a great advance in our art during the coming century.

It was comparatively easy to review in a measure the work of the past 100 years. As to the future, there is a saying that it is unwise to prophesy, unless one knows; but one may draw conclusions by analogy. Lord Macaulay said:—"People have only retrograded in civilisation and prosperity from the influence of some violent and terrible calamities, such as those which ruined the Roman empire or desolated Italy at the beginning of the sixteenth century. . . . The natural human tendency is towards improvement." This same principle is surely applicable to our modern architecture.

Trusting that no overwhelming calamity may occur to the detriment of our race and civilisation, and that, should reverses or bad times come, they will only tend to strengthen our moral, intellectual and physical force, let us rely on the natural human tendency towards improvement, and cherish the hope that our future architecture may reach a perfection transcending all that has gone before. Surely this should be the case. We have knowledge of all the past; we have greater facilities for the acquirement of every branch of learning than any people ever had; science is at a higher level than in any former period: shall progress in the art of architecture alone be arrested? It is not possible. The vitality shown in our academies, schools of art, guilds of arts and crafts, and not least exemplified in the studies and works of the students in connection with the Royal Academy and the Royal Institute of British Architects, tends to prove the truth of this theory of progress.

Let us consider some few points of interest in connection with the architectural practice of the present time, as well as some subjects of importance that may influence our art during the twentieth century.

There can be no doubt that the most important question of the moment is the necessity for a better and more methodical system of education for our students in architecture than exists at present. The Institute can only stimulate and assist such steps as may be taken in this direction. Its rôle is not that of a teaching society; its function is to foster and encourage the art of architecture, to guard the interests of the profession, and to examine and ascertain the qualifications of those wishing to be enrolled on the list of its members. England is lamentably deficient in adequate means of imparting the necessary grounding to the students who wish to turn their attention to this particular art.

The pupil, as a rule, picks up—as Mr. Arthur Cates has put it—his knowledge piecemeal, in a haphazard sort of way, in the office of a large practitioner, with but little attention from the one who really could teach him. This is almost unavoidable in the office of an architect in large practice. Then in order to pass the Institute examination the student crams with certain teachers. The cramming may have the result of passing him, but it leaves him still inadequately educated. Further, there is in all our schools too much concession to temporary or ephemeral fashions, notwithstanding many good examples of work done by our architects of this century in various defined sober and self-restrained styles. Men such as Burton, Wilkins, Barry, Scott, Cockerell, Soane, Pennethorne, Nash, Wyatt, Pugin, Elmes, Burges knew the groundwork of their art thoroughly, and this knowledge was the cause of the purity, dignity, good proportions and detail of their designs. There is much talk at times of Palladio, Michel Angelo, Brunelleschi and other old masters; but I wonder how much the average architectural student really knows of any one of them?

More severe and systematic courses of tuition exist in France. Their devotion, however, is limited almost exclusively to Renaissance. Their work, often most correct, is somewhat wearisome. But their course of study is thorough. A close familiarity with the best of what has gone before in Classic, Gothic and other styles should enable the architect who is gifted with some power and freedom of thought and expression to avoid the wearisomeness of the French modern architecture. And it may be remarked in passing that the faults in proportion and detail, and the incongruities often found in our English work, might be avoided in like manner. The new Byzantine cathedral of Marseilles shows the thoroughness of French methods of study. It is correct and imposing, but somewhat dull. Surely a little more freedom, a little more originality of thought, would have saved it from this charge of dulness without impairing its purity or dignity.

In France the centre of this thorough study of architecture, where each student gets properly grounded in first principles, is the Ecole Nationale des Beaux-Arts. And this is a Government establishment.

In Italy the central school is the Academy of St. Luke, also under Government.

In Germany there are a number of excellent training schools for architects, all under Government control.

In the universities, colleges and technical institutes of America there are some half-dozen or more first-class training departments in architecture which have now reached such efficiency that their students are ceasing to go to France for purposes of study. And the best American architects are often university graduates to begin with. All these countries have felt that the interests of the community and the State demand the efficient education of the student of architecture.

In England at present there are no Government schools architecture worthy of the name, or any individual endowmen that would render a successful organisation possible. It is true there have been certain schools of architecture attached to the schools of art, as at South Kensington; but in these the grounding in first principles has been on somewhat unsystematic and desultory lines, and the teaching of architecture is altogether subservient to the classes for painting and sculpture. The methods at the Royal Academy school appear to be similarly wanting in systematic grounding. A new school, under the Board of Education, forming part of the Royal College of Art, has been inaugurated at South Kensington, and a reorganisation of the schools of art generally is in progress; but this new school is apparently to be of limited scope, and designed mainly for the training of art teachers, and though students of architecture will be received, it will be chiefly to learn drawing and the artistic side of architecture. It will therefore be a hard task for the new teaching authorities to make it a complete and systematic school of architecture from the foundation to the finish. However, until it starts work it is premature to say what it may become or to discuss its efficiency.

Our universities seem to ignore architecture, the only bodies who touch the subject at all being University College and King's College, London, and Victoria University in the North.

It had been hoped that the authorities in the reconstruction of the London University would have taken some steps for the representation of architecture; but, notwithstanding that their attention had been particularly drawn to the desirability of this, and that a sister art and sister sciences are duly represented on the Senate, architecture remains unrecognised, and can only now be admitted by Act of Parliament. Apparently this is because there are really no properly constituted or efficient schools of architecture in the country, or none worthy of university recognition. However, Mr. Bailey Saunders, the secretary to the London University Commission, in his letter to the *Times* informs us "that amongst certain Boards enumerated in the regulations a Board of Fine Art, including architecture, is to be appointed, and that there is nothing to prevent the future Senate recognising architecture as a branch of science." Let us hope it may also be recognised as a fine art. If at any time the Senate of the London University does see its way to offer the opportunity of conducting examinations of a professional character jointly with this Institute, we shall not, I imagine, be slow to avail ourselves of it.

All this points to the immediate need of some efficient training school for architects, providing thorough grounding and systematic education.

Our junior society, the Architectural Association, has done much to further this object. If it extends its work in the direction suggested by the President a short time back, and becomes really a teaching body, a properly constituted, systematic and efficient school of architecture such as the universities will recognise, the thanks of the whole profession will be due to it, and an advance of unparalleled significance will have been made in our architectural education. But this is a matter of large and grave importance, and will require the deepest and most serious consideration if it is to be initiated at all; and to have any chance of success it must be no dilettante effort, but must be started on a proper basis, with the most competent professors in all the branches necessary for the complete educational equipment of the architect. An enterprise of this magnitude, undertaken in such a spirit, would be a fitting inauguration of the dawn of the twentieth century.

Should it become a reality, I cannot but think that the sympathy of the Institute with such a movement would prompt us to assist in every way commensurate with the means in our power. It might then be advisable, and even possible, to concentrate the energies of the Royal Institute of British Architects, the Architectural Association, and the Architectural Museum in one comprehensive scheme housed under one roof as the architectural centre of the United Kingdom, and indeed of Greater Britain.

But such a scheme would involve great expenditure, and architects, as a rule, do not become wealthy men. Still there are a few amongst our leaders to whose generosity I should suppose such a scheme would appeal. And surely there are also some public-spirited persons outside our profession who, appreciating the vital necessity for a better system of education amongst architects, and the value of good architecture in the history of a great empire, might, if properly approached, be inclined to assist munificently in the carrying out of such an object.

The oft-repeated cry against the formal teaching of any art seems to have died of late, and we hear less of the triumphs of unaided genius. It is perhaps only in novels that the Phœnix of painting and sculpture takes his erratic flight, exhibiting at the Royal Academy with no previous tuition, and earning a princely income immediately after the appearance of his first picture. We must admit that in architecture, as in the sister arts, the "flash of genius" is necessary to give impulsion to the work of the architect, but every genius is the better for sound teaching. As William Allingham has said:—

> Books, gowns, degrees will leave a fool a fool,
> But wit is best when wit has been to school.

In connection with education we have in the collection of casts that forms the Architectural Museum a most potent instrument ready-made to our hands. This series was gathered together about thirty or forty years ago, when Gothic was most in vogue, and the examples are mainly in that style. The museum building itself is in need of repair, the collection wants rearranging, and additions of good examples of Cinque-cento, Spanish and other styles of art in which sculpture and plaster decoration play a leading part. If this museum, expanded in scope, were made part of the school suggested by the Architectural Association, and were organised in connection with the Institute, it would be worth considering whether to its copies of architectural sculpture and details an addition should be made of a technical collection. It might then show samples of building materials—without being a trade museum or an advertisement of building appliances and inventions, but being a museum wherein the student or architect could learn the properties and uses of the raw materials of his art. It is true we already have the Geological Museum, but the specimens of building-stone, for example, shown there give no information on the points on which the architect is interested, such as constituent parts, weathering capacities, crushing weights, specific gravities, supply sources, prices, the uses to which it has already been put. This project would be easy were the Institute in possession of more commodious premises. We had a faint hope of obtaining the use of Burlington House, lately vacated by the London University, but unfortunately it is to be taken up for Government offices.

A second very important question is that of the present status of the architect. Any person, however unfitted to practise the art of architecture, or even that of building with no pretence of architecture at all, can put a plate on his door and dub himself "architect." This is an absurdity, and as much a danger to the lives and pockets of the community as the quack practising in medicine. With a view to remedying this state of affairs it has been suggested that some form of registration by Act of Parliament of architects now carrying on business (and hereafter those who have passed an examination) should be adopted. But as this would not prevent quantity surveyors, engineers, land agents, house agents, builders and others undertaking the duties of architects, and obviously for many years would introduce to the public a host of absolutely unqualified men, as specially licensed by Act of Parliament to perform duties not only involving the security of the life and property of the subject, but the reputation in future years of the cultivated and artistic sense of this great Empire, I need scarcely remind you that the Institute has hitherto strenuously opposed such a measure.

As an instance of an unauthorised and meaningless use of the word "registered" I saw a short time ago in a provincial town a name on a door-plate, with the words "Registered architect" attached. On inquiring what this signified, I learned that he was a registered member of some architectural society—not the Royal Institute. No doubt the unthinking public might attach some value to this title, implying some superior qualifications for practice as an architect. It would also be likely to exercise a prejudicial effect on those who declined to attach to their names such a meaningless word. That the public should be safeguarded in some way in regard to the practice of architecture by unqualified persons is becoming daily more apparent.

The status of medical men in every branch of their profession is gauged by the qualifying examinations they have passed and the registerable diplomas granted them by the various legally qualified universities or medical corporations. Though the registration of these diplomas is not compulsory, any man having obtained a qualification in medicine or surgery is allowed to practise according to his qualifications, whereas an unregistered medical man cannot hold an appointment in any public or Government institution, his certificates are not valid, nor can he recover any charge in a court of law. This is for safeguarding, in a measure, the lives of the community from unqualified practitioners in medicine and surgery.

As to solicitors, their qualifications are fixed by the Solicitors Acts, and any person who attempts to practise as a solicitor without those qualifications is amenable to the criminal law. A qualified solicitor must (*a*) have duly served as clerk under a binding contract for a period fixed by law under a practising solicitor; (*b*) have passed the proper examinations; (*c*) have been duly admitted and enrolled; (*d*) possess a proper annual certificate (on which a considerable stamp duty is charged) enabling him to practise for the current year. His fees are regulated by law, and can be taxed by duly appointed officials. This is to safeguard in a measure the interests and property of the community from the action of unqualified men who might otherwise practise as lawyers.

But at present there is no safeguard to the lives and pockets of the community from the actions of unqualified persons practising as architects. A revival of the ancient guild system seems to be a strongly marked modern tendency, nor can there be any doubt of its protective value to all professions, since enrolment in a recognised society practically amounts to registration. Thus accountants are not, I believe, bound by Act of Parliament to register; indeed, I suppose anyone may practise as an accountant, but no one can use the title "chartered accountant" unless he belongs to the Institute of Chartered Accountants and has passed an examination.

The value of the title "chartered accountant" is due to the fact that the examination is very severe, and considerable knowledge of law is required. In order therefore to improve the status of members of an established corporate body like ours in the eyes of the public, the examination for membership should also be severe, and comprise not only construction and architecture, but legal and other subjects necessary to fit a man for his profession.

The Incorporated Law Society commenced its existence in a very similar way to the Royal Institute of British Architects. After a time it began to impose the passing of examinations as a condition of membership Later the registration of solicitors was made compulsory. Still later they acquired the entire control of examinations, the custody of the roll of solicitors, the registration of articles of clerkship, the power of admission and readmission of solicitors, the renewal of their certificates and other powers.

To follow on somewhat similar lines should be our policy. And whatever steps towards the legalisation and control of the practice of architecture may in the future be considered desirable, this Institute should be prepared to initiate any movement which might be likely to best serve the public interest and place the profession of architecture in the high position to which it is entitled.

Whenever we can obtain for this Royal Institute such legal recognition, with extended powers for regulating the qualifications of persons desirous of becoming architects, the admission to membership would become practically admission to the architectural profession. It would be a guarantee of efficiency, through the fact of having passed examinations held either by the Royal Institute of British Architects or by universities or other qualified examining bodies in conjunction with the Institute. The professional status of an architect would then attain a position commensurate with the dignity of the vocation.

It may be as well to remind you that Her Majesty's Government, the Government of India, and corporate bodies both in London and the provinces, have recognised the standing and influence of the Institute on many occasions, and have frequently sought our advice and assistance for the public benefit. Surely, then, there is good reason to hope that in the near future any well-considered scheme emanating from us for giving a legal status to any qualified practising architect would receive the favourable consideration of the Government. Many details would have to be carefully considered before submitting to Parliament any measure for making this Institute the controlling body of the architectural profession, and I think that this question should receive the serious attention of the Council early in the century.

There is a third matter, in relation to architects and the practice of architecture, to which I must refer, and that is public competition. This was a burning question when I was a pupil, is a burning question now and will, I fear, continue to vex the souls of future architects. I cannot help expressing the opinion, based on years of experience, that whether looked at from the point of view of the client who desires to obtain a good building, or of the architect who wishes to do himself justice, or of the general public interested in fine architecture—architectural competitions are a failure. In most cases better designs, or designs more suited to special requirements, would result if architect and client were in constant consultation from start to finish, than if the former was working from printed instructions only.

For years past correspondence in the professional journals has shown the keen sense of dissatisfaction caused by competitions. A strong evidence of this is the recent raising of the question whether an assessor should adjudge higher value to the plan or to the elevation of competitive designs. It frequently happens that the competing architect, unable to consult his client, elects either to depart from the prescribed conditions of accommodation for the sake of his elevation, or to fulfil the plan conditions to the detriment of his design; in each case placing the judge in a most difficult position, and possibly causing discontent to both competitors and the promoters of the competition.

In making these remarks I have no wish to decry the work of many of those eminent architects who have earned their reputations by competition. In my own case the commission for the largest building I am responsible for—the Allahabad University for the Government of India—was obtained in competition. But I am bound to say it was practically redesigned, in consultation with the authorities concerned, after the competition had been decided in my favour.

I have lately been arbitrator in a case where one point in dispute was that the architect, after gaining a competition, had practically to replan the whole building to suit requirements of authorities who ought to have been consulted at the beginning, for which replanning he claimed payment, and I know of a number of similar instances. The selection of a capable architect, and placing him in direct rapport with his employers from the beginning would have saved an enormous waste of time, money and energy. It would be easy to compile a long list of both public and private cases in which the results from this cause have been disappointing and in some instances disastrous. And it is significant that in recent Government buildings the principle of competition has been virtually abandoned.

It is said, however, that it gives the young man a chance. That may be so; but in architecture as in every other profession the man of energy and ability will come to the front, competition or no competition. The work a man has done is as good a criterion of his powers as any fresh design he may produce in competition, and it becomes simply a cruel waste of time and money to force him continually to compete.

In a merely economic sense the waste of money and energy in this strife is absurd and monstrous. In six competitions I could name the total sum to be expended was 400,000*l.*, and there was an aggregate of 320 competitors. Say that each one spent at least 60*l.*—which in most instances is less than the actual sum—on the preparation of the plans, the total cost to the architectural profession in competing for these six works would have been 19,000*l.*, and that for a net profit to be divided amongst the six successful architects of some 12,000*l.*, assuming that, say, 2 per cent. on the total amount involved would be the cost to the architects of carrying out the works.

Is it not a monstrous injustice that we should be compelled to waste so much money, energy and brain-power in order to obtain an honest livelihood? No tradesmen even would submit to such injustice. But architects themselves are greatly to blame in this matter. We have not sufficient *esprit de corps.* Too many of us are ready to enter into competition where the terms are manifestly unfair on the bare chance of obtaining the work. Private competitions are on a different footing, where each competitor is paid a fair sum for his design.

This Institute has done much to help in getting competitions started and carried out on fair or approximately fair lines, but it rests with individual members to show some self-respect and dignity in declining to compete unless the terms are fair and the competitor placed first by the assessor be employed to carry out the work.

However much the Institute has done, I am confident the Council would be only too pleased to do more. There have been some suggestions made in a recent discussion in one of the architectural papers which are scarcely practicable. Our competitions committee or Council can only take action when a competition is announced or an assessor is asked for, and then only by suggestion, for we cannot dictate. More often than not we are asked to appoint an assessor after the conditions have been decided upon and issued by the promoters, or the designs have been actually submitted.

I think matters might be helped somewhat if allied societies also appointed small standing competition committees, whose business it would be on hearing of contemplated competitions, immediately to open communication with the promoters and point out to them the views of the Institute and our suggestions as to conditions. This course might prevent in many instances the conditions being issued before an assessor was appointed, and so save much trouble.

A properly appointed assessor affords a better guarantee for careful examination of designs than the haphazard system which used to prevail; but I think architects should refuse to compete unless the conditions are just and have been drawn up by the assessor. With regard to suggestions made as to the method of appointing an assessor, I can only express my opinion that a body of men, however able the individuals composing it may be, is not the best instrument for selecting a person for any particular appointment. A responsible person who has the opportunity of consultation with reliable colleagues has a much better chance of making a fitting selection. But when all is said and done, an assessor cannot always be relied upon as infallible, any more than in legal matters a judge's verdict may not sometimes require reversing.

There is one other matter I may mention in connection with our professional practice. After negotiations lasting I am afraid to say how many years, at last a definite form of building contract has been agreed upon between our Council and the Institute of Builders, and now only needs the approval of our general body at a business meeting. This will shortly be laid before you, and, gentlemen, I think this is a most important point, and one that will save endless difficulties between architects and their clients and contractors in the future.

So much for matters in connection with the professional practice side of architecture. Now let me glance at one or two subjects that may become important factors in the architecture of the next century.

First of all comes the question of the art of architecture as distinguished from mere building. I have already mentioned the debate as to whether in a competition the assessor should regard more the plan or the artistic qualities of the elevation and design. It has been suggested by an eminent Royal Academician that theory should be subservient to practice and that the elevation is the growth from the plan—the plan first, the elevation after—a principle, he considers, too often neglected. I cannot think that any hard and fast principle can be laid down.

There is a sense in which it is true that the elevation should grow from the plan, but in practice I think an accomplished architect considers both together. Our art is largely a matter of co-ordination, compromise and compensation; one gives up a trifling advantage of plan to obtain a better artistic effect, or one foregoes a point of effect in design for the advantage of the plan.

Architecture is neither planning nor making fine elevation, but a combination of the two—and of much more besides. For there is a subtle and not easily defined quality to be found in all good architecture, one not always included in convenience of plan or propriety of design, which the world has agreed to call "Art." Tolstoy says, "Art is a human activity transmitting feelings," and the stronger the "infection" the better the art. The test of its greatness is not only whether it infects with the artist's feelings those who may be prepossessed in its favour by special education or fashion, but whether it is capable of influencing the unbiassed judgment of the world at large in different countries and times. The late Lord Leighton also evidently felt this to be the meaning of the word "art," for in one of his lectures he said:—"Art is based on the desire to express and the power to kindle in others emotion active in the artist, latent in those to whom he addresses himself." The quality of this transmitted feeling is of infinite importance. If the work is virile and noble, it elevates the soul; if it is puerile or vicious, it debases it. Certain triumphs of our art—the Parthenon, the Pantheon, the Taj Mahal, the cathedrals of Chartres, Rouen and others, and some of the best examples of the Cinque-cento period—well-known works, still freshly transmit the feelings of their creators, and in Tolstoy's phrase unmistakably "infect" the beholder with their sentiments.

It is our misfortune just now to have urged upon us comparatively trivial and local views of this great subject. We have had this century a Classic revival, which would take a temple portico as a model and plant it on to a domestic palace as fitting rural architecture. However charming this may appear in a distant view of a large landscape, as at Prior Park at Bath, nothing could be more incongruous with domestic English life or with the severity of the weather in this uncertain climate. This class of work did not "infect" more than a portion of the community predisposed in its favour.

We have had enthusiasm for Mediæval art reproducing for modern requirements and worship fourteenth-century churches, complete in all their parts—or introducing ecclesiastical details and construction into modern domestic work, regardless of the difference in times, politics, social life or thoughts, and of the eternal fitness of things. This class of work did not "infect" more than a portion of the community who were educated to appreciate the influence. We have had those who said that, in the absence of sculpture, architecture is non-existent, being then simply building. We have had others who affirmed that as "good wine needs no bush," so good architecture needs no sculpture. The revulsion of feeling caused by the extremes of the Gothicists is now producing a school who think the finest architecture consists of plain Georgian windows and a good cornice—a nice simple style in which the minimum of detail labour may answer for the maximum of building. This school cannot look at Gothic without exasperation, as years ago the Gothic admirers could not regard Classic; but it has been noted before this that differences in points of taste often produce greater exasperation than differences in points of science.

With few exceptional instances, every one of these schools fails in greatness as the best of old work did not fail—according to either of the above definitions of art. What is it that is wanting? Was the perceptive faculty missing in the designers—or the large and cultivated mind, the breadth of view and artistic inspiration which lead the genuine artist to interpret in his work the wants and feelings of all times and peoples, or did they aim to satisfy only the ephemeral fashion of the moment? If so, this means that more thoughtful education, culture and travel are required for expansion.

It is a matter for serious regret that the East, and especially India, the cradle land of much that we most prize in Europe, is so entirely neglected by our students and professors. Indian architecture has a whole world of instructive examples of grandeur of proportion, picturesque grouping, perfect planning and beautiful detail, besides an indescribable, nameless poetry nowhere else to be found.

I do not suggest that we should copy Oriental architecture any more than that we should copy Greek or Egyptian work, but that it should be seen and studied as an educational process, as well as for its own sake, and the more especially as Great Britain is now not only a European but an Asiatic Power.

In these days men are apt to restrict and stint their studies and tastes, as trees are stunted by Japanese gardeners, until their own peculiar little school or period of architecture stands to them for the whole circle of art, a course that is as narrowing and prejudicial to progress in art as it would be in the field of science.

I only say that notwithstanding the wealth of art to be found in Italy, Greece and elsewhere in Europe there is, nevertheless, much to be learned further east. Surely it is the want of real educational grounding in properly constituted schools, and of larger travel and wider study, that causes us to find so much that is disappointing in our modern work.

Her Majesty's Government of India has done many things in the interests of Indian art and archæology of less promise and profit than would be the establishment of travelling studentships in India; while to the patriotic and wealthy in this country the idea may well be commended, for there can be no doubt there is as much to be learned in the East as in the West.

As to the next century, among its many problems it seems likely that some revision of our present methods of church planning may result from the needs of great congregations in our cities and large towns. It is not Dissent alone that now commands large crowds and requires expanded tabernacles. The Mother Church also needs grand areas for worship where all can see and hear.

Perhaps in the near future it may be thought advisable to consider the plans of such buildings as the ancient basilicas, the early church of Santa Sophia at Constantinople, the Pantheon at Rome, the grand Oriental mosques and the church of Santa Maria del Fiore at Florence, with a view to avoid the blocking of the central portions of our large churches or cathedrals, after the Mediæval manner so detrimental to congregational worship. We may then possibly find a way to bring the altars forward instead of placing them some hundreds of feet away from the nearest part of the congregation. Something may then be arrived at larger, broader, simpler, grander and more suited to an enormous, earnest, devotional congregation intent on taking part in the service of worship, than in an arrangement whereby they are crowded out of sight by the narrowness of the nave and the massiveness of the piers. I can conceive that such a building might be a glory to the century, not necessarily of cold, Classic details, or of Oriental feeling, or of severe Gothic, but nervous with the life and aspirations of modern times and beautiful in proportion and detail and in sculptured lessons.

Also as to our streets; we have the problems of open spaces, public buildings, institutions, hospitals, asylums, schools, houses for the poor, and blocks of self-contained dwellings for the middle classes. There is much to be done, notwithstanding the strides that have been made in the arrangements of all these during the last fifty years. London is being fast rebuilt—certainly in the central part. I would ask on what principle is this rebuilding being done? Is more forethought being expended than in former centuries? Is the laying-out of new streets on large enough lines to free the constriction of the ever-increasing traffic, to admit of abundance of light and air to the overcrowded areas, and to obtain heaven's blessing of green leaves and trees in our main thoroughfares? Is any shelter from rain and snow thought of for pedestrians? Are our open spaces, bridges and approaches to be properly designed and laid out by our most capable men, or left to the chance ideas of the subordinates of our county councils and other authorities? The time must come in the next century when the rebuilding of London for its enormously increasing population—increasing, I believe, at the rate of some 50,000 annually—must be proceeded with in real earnest, not merely in the childish way of pulling down at intervals a few squalid neighbourhoods and running new streets on chance lines through the clearing as being the cheapest method of making a small improvement, and on designs obtained by ill-considered methods, with no definite intention of carrying them out. Is new London to be] allowed to grow up with as little apparent design as a vegetable—controlled by a thousand influences, some hidden, some vainly directed? Or is it to be on an imperial, necessary, convenient, healthful and tasteful plan, properly thought out and laid down beforehand by competent hands and rebuilt under a wise control? If the latter it is time energetic steps were taken to arrange for it, and the best architects and engineers asked to collaborate in the matter. Our main thoroughfares, narrow and choked with traffic, dangerous to life and limb, wanting in light and air, are gradually being reconstructed on almost the old lines, subject only to the improvements in construction and to regulations as to heights insisted on by the London Building Act. They are unhealthy by overcrowding; the wood paving alone, through insufficient cleansing of the dust impregnated with impurities, is causing new diseases of eyes and throat.

One cannot but feel that a step in advance has been made by the fact of the London County Council becoming alive to the importance of obtaining thought-out schemes and designs for future improvements, though only in part before rebuilding is commenced.

The Strand to Holborn scheme is clearly a movement in the right direction, recognising as it does a general principle, however ill advised the County Council may have been in the particular method of applying it; for we cannot but regard as unfair their conditions to the architects, and the nature of an arrangement unsatisfactory by which, even when designs may be settled on, there is no guarantee or certainty that they will be carried out.

But if in the rebuilding of London our authorities are wise, at an early date in the new century plans should be prepared, showing future lines of building and increased width of thoroughfares; and all future building operations, private or public, should be controlled within these lines, no matter at what cost. The streets should be wide, our main thoroughfares sufficient to allow of trees, like the Unter den Linden or the Paris boulevards, and arranged to harmonise with beautiful buildings. The roads should have efficient means of copious flushing and cleansing with water.

It is worth considering whether shops should have arcades over the footpaths for the protection of pedestrians from rain, snow and sun. There are objections on the ground of police supervision and light, but they are by no means insuperable, while undoubtedly the arcade gives the architect his only chance of making a shop-front constructively reasonable. At present huge façades of stone or terra-cotta and brick appear to be slung in air over a yawning abyss of plate-glass. Of course everyone knows they rest on iron girders and columns, but a well-designed arcade would give a sense of safety and constructive propriety and still might admit sufficient light to the shops.

There should be subways everywhere, as exist now under a great part of the streets of Paris. These would contain the sewers and drains, water and gas pipes, wires for electric lighting and telegraphs and telephones, hydraulic power pipes, and possibly mains for a public supply of steam for heating and ventilating, cooking and driving machinery—thus avoiding the present and ever recurring nuisance of the breaking-up of the roads.

Our public buildings, institutions, middle-class blocks of self-contained houses and dwellings for the poor should have their surroundings clearer and their sites arranged for free admission of light and air in abundance, and the ground area not overcrowded by inmates. The spaciousness would also permit the architecture to be seen, and would be an incentive to higher class design, which, as well as the laying-out of the streets, should be under official control.

The problem of the housing of the poor should be so solved as to raise the working classes to a higher physical and moral level, and assist in redeeming them not only from the worst evils of poverty and misery, but from evil surroundings and wickedness.

Sir Thomas More said, "All men, even the vicious themselves, know that wickedness leads to misery, but many even amongst good men have yet to learn that misery is almost as often the cause of wickedness" It will become in the next century a part of the highest duties of architects to see to this. They must render the dwellings of the poor not only comfortable and sanitary but beautiful, so as to educate and raise their tastes.

The movement to this end, based on the awakening conscience of the upper and middle classes as well as on the urgent practical necessities of growing London, is at present only in its infancy. With the happily constant growth of human sympathy it must become one of the most poignantly interesting as well as one of the most important problems of the age, one which the most accomplished architects need not feel to be beneath their notice, and which indeed they should be called upon to assist in solving. We all know of examples of even almshouses, picturesque, beautiful and dignified, designed by some of the greatest men.

There have been powerful rulers in the world's history who have dared not only to rebuild cities, but to decree their removal when necessity demanded. Amber, the ancient capital of Rajpootana, was deserted, and the town of Jeypore erected to take its place by the order of its ruler, Jey Singh. Toghlukabad, near Delhi, is a similar example. Turin has been rebuilt during this century, though on the uninteresting mechanical gridiron system which the Americans have adopted in laying out their new towns.

The rebuilding of a city is a rare opportunity, and should be well and artistically done. John Wood, of Bath, and his son had this rare chance, and they took advantage of it in a splendid manner. Sir Christopher Wren prepared sketch plans for rebuilding London after the Great Fire, but had no opportunity of carrying out his ideas. Now London is unique in the fact that, notwithstanding its wonderful and continuous growth through many centuries, its centre, the City, has always been fixed. In any future reconstruction this centre must be the starting-point; the main arteries for traffic must be arranged to radiate from this centre to the surrounding suburbs.

But this is not all. We have heard at our Congress last session of the necessity for collaboration between the architect and sculptor and painter—that is to say, closer union of all the arts is needed in the master art of architecture.

Painting may have more scope in the architecture of the future in the way of internal decoration than during the past century, and there are many signs of this coming to pass.

But sculpture must have much to do with the design of the external architecture and rearrangement of new London if it is to be worthy of this great empire. The question of the right manner of its introduction in detail I do not propose to open. I am not addressing pupils. I am simply stating my conviction that we may look forward to a far more intimate union between sculptured work and constructive forms than we see at present. Yet most of us have observed recently in the productions of some of our younger sculptors strong appreciation of the decorative capabilities of their art, and one could mention men to whom might be confided the carrying out of even a constructive piece of decoration with the certainty that it would be wrought in harmony with its architectural environments. This harmony is not always effected. Nothing can be more wasteful and absurd than to finish sculpture placed at a great height above the eye to the extent that the figures on the top of Milan Cathedral are finished. Or again, I cannot think it happy to place sprawling meaningless figures on the sides of window pediments, like some I noticed the other day—out of scale, coarse, and so large in comparison with the pediments that they looked scarcely capable of sustaining their weight; or, on the other hand, to place in similar positions rows of nude children, repeated ad nauseam, is a costly, meaningless and futile decoration. Nor can I think yards of repeated terra-cotta ornamentation excellent. But much depends on the manner of the introduction of such embellishments. Sculpture in connection with architecture should not be the first object to attract the eye, but should take its place as a part of the general scheme, adding to and not upsetting the general harmony, helping the architecture to tell its tale.

Sculpture is the natural complement of architecture, often indeed as integral a part of it as the blossom is of the tree, crowning it with beauty, and manifesting in clear and unmistakable terms its object and purpose. At first carver and mason were one; later on, as skill increased and finer materials came into use, the sculptor became, as art critics say, "emancipated from bondage," and had no further need for the ladder by which he had climbed. So now it is laid down on high authority that "the insulated statue is the highest and truest production of the sculptor's art." It is difficult to upset dogmas.

But the doctrine is more literary and popular than sound. Not that I would grudge sculpture any place that may be claimed for such work as independent art. Yet as to which are the triumphs of art in sculpture I believe the sculptors would be unanimous in their verdict for those by Pheidias on the Parthenon. We now see these technically perfect works as "insulated" statues or groups in our galleries. But they were much more than marvels of the skill of an independent sculptor. They were part of an architectural composition to which they gave a nobly decorative effect, while they were fraught with a significance which few of us can now adequately appreciate, expressing the attributes of the Virgin protectress of the city, whose image in ivory and gold was enshrined within the temple.

The sculptors of the Middle Ages, no mean artists, seldom attempted the "insulated" statue. At a later date Donatello produced statues independent in themselves, and not "mere adjuncts" of architecture. Now at Florence one may see the original of this clever artist's St. George as an "insulated" statue in the Bargello, but there is a copy in a niche of the church wall from which the original was removed (for better preservation), and I think I prefer the work as a "mere adjunct." Also I would prefer the same artist's beautiful singing boys relief in the place for which it was originally designed, though it may now be seen in most galleries as an independent work.

The critics who uphold this doctrine of insulation, as we may call it, doubtless think of the matchless single figures of Greek workmanship, of which copies and a few originals are seen usually in a fragmentary state. But they probably forget that the majority of these works, including even the magnificent Venus of Milo, now standing in solitary grandeur in the Louvre, were originally part of an architectural composition. I cannot help feeling that sculpture divorced from architecture loses greatly in value, character, style and teaching. Not only is the charm of work wrought in harmony with architectural surroundings lost, and any teaching of a definite age missing, but its composition suffers from the absence of the confining lines which enhance its value.

With freedom and detachment more elaborate detail is possible. The work ceases to be sculptural, while the artist often lapses into that kind of naturalistic imitation which, carried to the bitter end, is seen at Madame Tussaud's.

There is a great gulf between the portrait statues and busts of Rome, conceived and executed in a style which was then a vital force, set in congenial architectural surroundings, and our forlorn and sparsely sprinkled public effigies. If an estimate were framed of the cost of these latter, I feel persuaded that half the sum spent on irregularly spotting our public places with insulated statues (which are never even washed) would have sufficed to cover the greater part of our public buildings, now blank and inexpressive, with fitting sculptured adornments, significant in meaning and beautiful in effect.

A building is of itself an historical monument, upon which, more fitly than by any insulated work, the varied aims, achievements, interests and story of the time can be permanently inscribed. I do not mean to say we should have no independent statues at all, but rather that when we do have them, even in our public places and gardens, and on our bridges, they should form part of a properly considered architectonic scheme.

But there must be in our future progress not only collaboration with the arts in sculpture and painting, but also with science in engineering.

The opportunities afforded of constructing vast enclosures, bridges, roofs, &c., by means of iron and steel were impossible in former times with only the older materials. In such works the science of the engineer must necessarily be predominant; but there is no reason, if engineers and architects would work amicably together, why this class of work should not be grand and beautiful.

If architecture neglects scientific construction in other materials than brick and stone, it is not properly fulfilling its mission. On the other hand iron and steel could certainly be used without the meagreness or aridity of effect to which we are unhappily so much accustomed. It certainly is not impossible to make a beautiful iron bridge or roof. I occasionally go to a small railway station, not very far from London, where the ironwork always "infects" me with a pleasurable feeling. The forms and details are beautiful without too great extravagance or waste of material by unnecessary weight. But instances of this sort are rare; and no doubt, as a material, iron or steel has many drawbacks in an æsthetic sense.

But anyhow, this is a subject to which our rising generation of architects should turn their earnest attention, if progress is to be made in many of the great structures of the time; and I reiterate they should work in collaboration with engineers as well as sculptors and painters.

I have now, gentlemen of the Institute, ventured to direct your attention to a few of the subjects that appear to me to call for our consideration, and in some cases for our united action, if there is to be material progress in our art during the next century.

The growth of our Institute and similar bodies and the status of our profession, the necessity for the establishment of a broader, more systematic and comprehensive scheme of education in architecture, the unsatisfactory nature of the competitive system, the expansion and concentration of the energies of this Institute in connection with the Architectural Association and the Architectural Museum, the cultivation of a more effective and intimate sympathy between the architect, the sculptor and the engineer, and some of the problems and opportunities presented in the rebuilding of London have been glanced at with, I feel, somewhat diffuse references to other cognate subjects.

But one cannot expect that a large body will in all these matters see eye to eye with one who, though occupying this chair, is but an individual. I have, however, at least expressed some of my most earnest personal convictions, and as such I commend them to your consideration.

The interests of the profession are not altogether in the hands of the Royal Institute of British Architects, for, unfortunately, there are architects who are not members.

But if influence is to be brought to bear on the many important problems in connection with our art in the near future, arising out of the development of the country and this great city, the heart of the British Empire, it must be by unselfish co-operation. If our Institute is to be a power in influencing public opinion and the education, efficiency and honourable conduct of the profession, a right feeling of *esprit de corps* should animate all our architects in an endeavour to increase its authority as their representative. With this object in view I conclude by appealing to those who, having the necessary qualifications, have not yet joined us to do so, that all our forces may unite in the work we are endeavouring to carry out in the interests of the public, the profession at large, and the noble art of architecture.

Mr. Alfred Waterhouse, R.A., proposed a vote of thanks to the President for his address.

Mr. G. F. Bodley, A.R.A., seconded the motion.

THE HELLENIC SOCIETY.

THE first annual general meeting of this Society was held on the 1st inst. at 22 Albemarle Street. Mr. Penrose presided, and there was a numerous attendance. Mr. Arthur J. Evans read a paper on "The Tree and Pillar Cult of the Mycenæans and its Mediterranean Relations, with Illustrations from recent Cretan Finds." He said that evidence as to the true character of the Mycenæan religion had been recently accumulating largely from materials supplied by the scenes on signet rings, and this was now supplemented and confirmed by important discoveries made in Crete. The Mycenæan worship was essentially a cult of sacred trees and pillars and their small temple and dolmen-like shrines. Temple images in human shape were unknown. Survivals of this religious stage were traced in later Greek worship, but it was shown that the most living illustrations were to be found on the Semitic side, and largely in Biblical sources such as the pillar set up by Jacob at Bethel. Egyptian influences were also traceable, and it was shown that the megalithic buildings of the Maltese islands contained the shrines of a similar pillar worship. The recent excavations at Knossos had revealed pillar shrines in the Mycenæan buildings, the pillars in some cases marked with the double axe symbol of the Cretan Zeus. A remarkable fresco, moreover, from the palace gave the front view of a small Mycenæan temple with "horns of consecration" before the sacred columns. A gold ring from the same site showed an armed divinity brought down by ritual incantation in front of his obelisk, while behind was a sacred grove in its walled enclosure. Mr. Evans pointed out that the libation table inscribed with prehistoric characters obtained by him from the cave of the Cretan Zeus on Mount Dicta had originally been placed on a small pillar which was in fact, according to the local tradition, the material form of the god, known as Baetylos—a word generally derived from "Bethel." A variety of other evidence regarding the forms of this Mycenæan tree and pillar-worship was adduced, and its character was illustrated by the author's personal experience of a similar cult of a sacred pillar still surviving in the Mohammedan village of Techino Selo in Upper Macedonia. Professor Waldstein said the thanks of the meeting and of all interested in archæology were due to Mr. Evans for his brilliant discoveries. For himself, knowing the high civilisation which we recognised as Mycenæan, he was disposed to doubt whether their worship was of the primitive kind described by Mr. Evans, and to think that they were survivals of a much earlier period. A vote of thanks was accorded to Mr. Evans.

PRESENTATION TO MR. HOLMAN HUNT.

ON Saturday last Mr Holman Hunt was presented by many friends and admirers of his art with his portrait painted by Sir W. B. Richmond, R.A., and a silver salver. At the same time a copy of the following address, drawn up some months ago, was handed to him:—

April 2, 1900.

At a meeting held to-day, the seventy-third birthday of Mr. Holman Hunt, it was unanimously resolved that a copy of the following address be sent to him:—

"To Mr. Holman Hunt,—For fifty years lovers of English art have been deeply interested in your work. The part which you took long ago in one of the greatest movements which ever affected the artists of this country is not, and cannot be, forgotten. Since that time you have laboured in the service of your art with unremitting energy and fidelity to your ideal, encountering and overcoming difficulties and prejudices and manifesting in your life a noble simplicity of character and a warmth of heart which endeared you to many, and a quiet enthusiasm which years have not abated. Never aiming at success by means unworthy of yourself, original and independent, you have been enabled to do justice to your great powers, and your work will, we believe, be treasured by future generations of your countrymen. Most of your old comrades have left us before the century, of which you have been an ornament, has closed. In their names and in our own, we desire to express respect and affection and every good wish for your future.

"We propose, if you will kindly consent, to present you with a portrait of yourself, to be painted by your friend Sir W. B. Richmond."

This address was signed by—

Sir William Agnew, Professor George Aitchison, R.A, Mr. H. H. Armstead, R.A., Sir Edwin Arnold, the Rev. Canon Barnett, Mrs. Barnett, Mr. J. M. Barrie, the Rev. Canon

Benham, Mr. Robert Benson, Mr. Charles Booth, the Rev. Stopford Brooke, Sir Lauder Brunton, Sir J. Burdon-Sanderson, the Master of Trinity, the Earl of Carlisle, Mr. J. R. Clayton, Mr. E. Clifford, Mrs. Clifford, Mr. Edward Clodd, Mrs. Coates, Mr. Edw. H. Coates, Mr. J. Waley Cohen, Mr. Sidney Colvin, Mr. Leonard Courtney, Mrs. Courtney, Mr. W. L. Courtney, Mr. George Lillie Craik, Mr. Walter Crane, Mr. Lowes Dickinson, Mr. Austin Dobson, General Sir John Donnelly, Sir John Evans, the Dean of Canterbury, Sir Michael Foster, M.P., Mr. G. Frampton, A.R.A., Sir Alfred Garrod, Mr. Edmund Gosse, Mr. Anstey Guthrie, Mr. Frederic Harrison, Mr. Anthony Hope Hawkins, Professor von Herkomer, R.A., Mr. Maurice Hewlett, Mr. Arthur Hughes, Mr. Edward R. Hughes, Professor Jack, Mr. T. G. Jackson, R.A., the Dean of Durham, Mr. W. E. H. Lecky, M.P., Sir Norman Lockyer, the Bishop of London, Sir Godfrey Lushington, Judge Lushington, Mr. Norman MacColl, Mr. J. Macdonell, Mrs. J. Macdonell, Mr. G. A. Macmillan, Sir Theodore Martin, Mr. J. T. Middlemore, Mr. F. D. Mocatta, Sir Colin Scott Moncrieff, Lady Moncrieff, Mr. Sydney Morse, Mr. Henry Newbolt, Mr. D. Oliver, Mr. H. Orrinsmith, Mr. Gilbert Parker, M.P., Sir C. Hubert H. Parry, Sir Noel Paton, R.S.A., Professor Flinders Petrie, Mr. Hungerford Pollen, Sir E. J. Poynter, P.R.A., Sir Cuthbert Quilter, M.P., Sir G. Reid, P.R.S.A., Lord Justice Rigby, Mr. Richmond Ritchie, Mrs. Richmond Ritchie, Lord Ripon, Mr. J. Forbes Robertson, Mr. Briton Riviere, R.A., Mr. J. S. Sargent, R.A., Professor Sayce, Mr. R. Norman Shaw, R.A., Sir John Stainer, Mr. Leslie Stephen, Principal Story, Sir L. Alma-Tadema, R.A., Sir George Trevelyan, the President of Magdalen, Mr. Alfred Waterhouse, R.A., Mr. G. F. Watts, R.A., Mrs. Watts, Archdeacon Wilson, Mr. W. Aldis Wright, and Mr. George Wyndham, M.P.

SOCIETY OF ARCHITECTS.

THE report of the Council for the year ending October 31 1900, says continued progress and increased activity marked the Society's report. Since the resolution to double the annual subscription was confirmed, it is satisfactory to record that, with very few exceptions, the somewhat drastic but necessary step met with approval, and has been the means of placing the Society in a position to carry on its work to much greater advantage, and to much increase its activity and influence. The Council take this opportunity of expressing their appreciation of the generous way in which the members have supported them. Applications for membership continue to come in freely, some forty-six having been dealt with, forty-one of which have been approved, thirty-seven duly elected, and others are pending election. The Council regret the loss by death of seven members, including a distinguished hon member, the late John Ruskin. One member has been reinstated, twenty have resigned, and fourteen have been removed under Art. 44. Ten names have been added to the students' register, and two studentships have lapsed. One hon. member has been elected, and one member (Mr. G. S. Bridgman, past V.P.) transferred to hon. membership.

The total membership roll is now 569, and it should be noted that although it would be easy to show a larger paper membership, it is felt that the best interests of the Society are served by only retaining on the roll those who have fulfilled their obligations. For the half-yearly examinations to qualify for membership held during April and October, some hundreds of inquiries were received, but the high standard maintained caused many to postpone sitting until better prepared. Four candidates sat, of whom one was successful. There can be no doubt that these examinations will assist in promoting the higher education of the profession as they become more widely known. While on the subject of education the Council would call attention to the practical way in which the Society continues to uphold the compulsory education and registration of architects, by visiting the provinces and inviting discussion on this all-important subject. Four centres have been visited this session, viz. Exeter, Birmingham, Liverpool and Manchester, at each of which the president, Mr. T. W. L. Emden, has taken the chair, and Mr. Ellis Marsland, the hon. sec., has opened the discussion with a paper on the subject. Further meetings, for which the preliminaries are in hand, are only delayed by parliamentary and municipal elections, which have and will claim paramount attention. To the local hon. secretaries and other members who have assisted in organising the meetings held during the past year the Council extend their cordial thanks. Nine provincial meetings have now been held, and not only has the Society been well received, but a resolution in favour of the principle has been passed in every case, interest in the subject has been stimulated, and mistaken ideas as to the attitude of the Society in the matter have been removed. It is now generally understood that while the Society does and will continue to do its utmost to carry into effect the measure introduced into Parliament by the Architects' Registration Bill committee, they are quite prepared to co-operate with the R.I.B.A., if that body will take the lead, and on receiving a definite pledge of their readiness to proceed with the work without delay. The Bill, which was down for second reading on June 15 last, was not reached owing to pressure of public business. A letter was sent to every member of the House of Commons asking for his support, and the R.I.B.A. circularised the House in opposition to the measure, basing their objection to some four of its clauses only, which could have been amended if Parliament thought right. Mr. L. A. Atherley Jones, Q.C., M.P., has charge of the measure, and members may be assured that no effort will be wanting on his part to secure another hearing for the Bill, and in the meantime members of the Society can do a great deal of good by interesting their local representatives in the proposed Bill, and obtaining the promise of their support. Reform in the law relating to ancient lights is another matter in which the Council have been moving for several years past, and they are pleased to find that their action in presenting a petition to the Lord Chancellor two years ago has been followed by the R.I.B.A. taking up the question, and the forming of a joint committee with the Surveyors' Institution to inquire into the present law with a view to its amendment, and the Council have intimated to both institutions their willingness to assist the committee in any way in their power. Mr. T. W. L. Emden, the president of the Society, read a paper on the subject at Sheffield in January by invitation of the local architectural society.

ENGLISH CHURCH ARCHITECTURE.

THE object of the second of the evening course of lectures being delivered by Rev. W. Marshall, M.A., at the Town Hall, Horsham, was the consideration of Norman work. Mediæval architecture was, Mr. Marshall explained, universally progressive, never retrogressive. There was therefore a gradual approachment of one style to the next, consequently dates of building could generally only be approximately fixed. The addition of ornament was only an accident. The Norman period covered a space of 120 years, during which most of our abbey churches had been rebuilt. Edward the Confessor rebuilt Westminster Abbey during this period. Many of the leading ideas were taken by the builders from the Romanesque buildings which they had seen in the course of their wanderings. What we called Norman architecture was a great turning-point; but the Normans did not discover the pointed arch, which was the chief feature of this style. They developed it rather from the Romanesque. The Romans were hampered in their art by their attempt to use the arch in combination with the lintel. Where they used the arch without the lintel in the building of bridges and aqueducts they were all right, and achieved great things. Norman buildings were very solid in character, and they employed native labour in building them with disaster. They constructed their thick walls of rubble with but a thin veneer of stone on either side. Their foundations were often faulty, with a result shown in the case of the tower of Winchester Cathedral. More scientific builders would have built less thickly but of solid masonry. At first their construction was at fault; the materials they used were bad, and their joints of mortar were too wide. In the early Roman work these joints were "wide," in the late "narrow." These were distinguishing features. By means of photographs the technical term "rubble" was explained. "Rubble" was merely underworked stone, laid in layers. The ornamentation on these Roman buildings varied. At first it was worked with an axe, later on with a chisel. It was impossible to undercut with an axe, therefore the use of the chisel was a step forward. The fact of the roofs being of stone accounted for the narrowness of the aisles in many of the examples shown. These walls could not have borne the weight of a wide roof. An example of a wooden roof, flat at the top, with slanting sides and decorated with red, black and white paint, was cast on the screen. There were many examples of stone-vaulted roofs to be found in the crypts of our cathedrals. The students desirous of going more deeply into the subject of stone-vaulting were recommended to study Sir Gilbert Scott's book. The waggon vault form of roof, as used by the Romans, was in the shape of a tunnel. Where two of these tunnels intersected a groin was thus formed. In this early work no ribs were placed at these groins. A barrel or vault rests continuously on the walls. The manner of and development in vaulting these simple roofs was explained by means of diagrams. If the space to be covered in was oblong instead of square a difficulty arose, because the semicircular lines of the two tunnels could not be of the same height at their central point of intersection. It was necessary then either to raise the narrower arch or to so alter the form of the wider that it became semicircular only in the upper portion.

In this wise the groins could be made to intersect at the same height, but not without difficulty. The pointed arch, which was at this time introduced, swept away all such complications, for a pointed arch can be made almost any height without regard to width. Fire was a real enemy which wooden roofs fed. Where barrel vaults of stone were employed they were necessarily of great weight, and the aisles were covered with cross vaults in order to make these act as buttresses. Then came the fault of absence of light because there was no clerestory. Therefore the vault was raised to get light, but this gave little and weakened construction. Where the inner roof was of stone the outer was of wood and slanted to throw off the water. It was in 1150 that the pointed arch came to the rescue. The thrust of the pointed arch was lateral, and the flying buttress, which came to be used in conjunction with it, was really the half barrel longitudinal vault in another form. An example of this was shown in a photograph of New Shoreham. The French used these flying buttresses to excess and so lost effect in that most beautiful point of Gothic architecture, the windows. They thought that they must have height at all costs, and sacrificed much to get it. Early in the thirteenth century we found the chamfered arch. Plans of small and large conventual churches were explained in their differences. The small possessed nave with chancel and chancel arch; the large was vaulted, and had small chancel, tower and nave. The square chancel, or eastern end, was peculiar to England. The Normans made use of the circular form of window, and an example of how not to restore was shown, where, at Iffley, a modern circular window in imitation of Norman work had been made. This was one of those cases where people were found to be "actively employed in inventing puzzles for those who come after," which seemed to rouse the ire of the lecturer. In small conventual churches are rarely found aisles; they owe most to high pitch, and have no clerestory. At Steyning is to be seen a splendid example of a clerestory. Arcading was much resorted to for the enrichment of these buildings. The cruciform parish church is not so very common in Norman building. On the other hand, in large conventual churches this was the usual form. The naves of these churches were very long, they invariably had aisles, and the length of the choir was less than half that of the nave. This shortness of choir was a mark dating construction. As the ritual became more elaborate space was taken from the nave for choir seating and divided from it by means of a screen. Norman cathedrals were apsidal at the eastern ends, with choir, chapels and a central tower, the last more or less low. The crypt frequently extended under the whole of the choir. These crypts were used for the burial of saints; such crypts were to be found in only a few of the smaller churches. Massiveness and prevalence of horizontal lines was characteristic of the work of this period. By composition was meant the conscious disposal of parts. The nave of Winchester Cathedral was instanced as illustrative of the conversion of the Norman into the upright style of architecture.

DUNDEE INSTITUTE OF ARCHITECTURE.

UNDER the auspices of the students' section of the Dundee Institute of Architecture, Mr. G. S. Aitken, architect, Edinburgh, lectured on Saturday evening in the Technical Institute, Dundee, on "Some By-paths in Architecture." There was a large attendance. Mr. James P. Bruce, president, occupied the chair, and amongst others present were Mr. P. H. Thoms, Mr. Leslie Ower, Mr. Alexander Neilson, Mr. J. J. Henderson, Mr. James Low, Mr. Donald Porteous, Mr. T. Porteous and Mr. C. G. Soutar. The lecturer, after prefatory remarks, submitted that a knowledge of landscape gardening was a very good thing for an architect to have. It was a trite remark that the house an architect built might be made or marred by its surroundings. How needful for him, therefore, to understand the setting as well as the jewel, so that there might not only be accordance between them, but an enhancement of the one by the other. Mr. Aitken afterwards proceeded to give hints as to the laying out of grounds, commenting in graceful language on the various trees and shrubs which might be employed to this end. Passing on to speak of flower gardens, he said it would generally be conceded that while a certain amount of irregularity of plan and contour was advisable on that part of the grounds furthest away from the house, the immediately adjacent parts should be of a formal character, and in consonance with the architecture of the building. That admitted, it would not be difficult to determine the arrangement of the flower borders. Another by-path which the architect could follow with much profit was that of geology, because it was absolutely impossible that he could be fully equipped for his profession or be a competent judge of the materials he was called upon to handle without some precise information as to their origin and constituents. Water-colour drawing formed another by-path in architecture. It was quite needless to prove that every architect should be a colourist. Archæology was another instructive by-path, and in speaking on this subject Mr. Aitken illustrated how much valuable knowledge could be acquired by the study of ruins and ancient buildings. His description of a visit to Furness Abbey was peculiarly interesting. He subsequently referred to the study of heraldry as being still another useful by-path for the architect, and concluded by stating that there were special reasons why the architect should make a study of music. His own work would acquire rhythm and grace, and his studies on the mechanical side of music would qualify him to speak with authority when called upon to do so. The architect should no more step aside when in the course of his practice he was called on to design an organ-chamber in house or chapel or to devise a space for the bells which were to ring out from tower or steeple than he should withdraw from the consideration of sanitation and such other departments, which were too often considered mere by-paths in architecture. But any or all the by-paths to which he had referred were not to be so absorbingly followed as to interfere with the attention which was due to the weightier matters of skilful planning, soulful design, sound construction and healthful arrangements. At the close Mr. Aitken was heartily thanked for his instructive lecture. The chairman also was thanked.

GENERAL.

The Duke of Wellington has arranged that Reading Museum will have the first choice or loan of the valuable discoveries made during the systematic excavations at Silchester. So far they have consisted of Roman and Romano-British remains. Any duplicates will be loaned to the new museum in Winchester which is about to be built.

Lord Pirbright has presented a site to the Pirbright School Board adjacent to present buildings for the erection of a new infants' school.

M. Gabriel Bouvet, the painter, one of the most brilliant pupils of Bouguerau, died last week.

During the Restoration of the church of St. Cecilia in Rome some frescoes have been uncovered. They were executed by Pietro Cavallini, painter and mosaicist, who was a pupil of Giotto.

The Most Recent finds in the Forum Romanum include two equestrian statues, together with others. The rostra of the Republic were unearthed near the Græcostasis. A large Christian basilica has been discovered in the Palatine. It belongs to the third century A.D.

M. Dagnan-Bouveret, the painter, has been elected member of the Académie des Beaux-Arts of Paris by twenty-two votes out of a possible thirty-seven. M. François Flameng was in the second place.

Mr. R. Singer Hyde, of Worthing, has prepared plans of the proposed new local Board school at Worthing.

A Memorial Window has just been erected in the north wall of Redland Green chapel, Bristol, to the memory of Dr. and Mrs. Prichard of that locality. The subject is "Our Lord as the Great Healer, St. Luke the Beloved Physician, and St. Barnabas—a Son of Consolation," and is classically treated to harmonise with the building. The window was designed and executed at the studio of Mr. T. W. Camm, of Smethwick, near Birmingham.

Mr. Roger Fry yesterday began a series of six Hermione lectures in Alexandra College, Dublin, on "Florentine Painting of the Early Renaissance." He proposes to treat of the characteristics of fourteenth-century art and the origin and development of the various Renaissance schools and their exponents, Masaccio, the leader of the new movement; Fra Angelico; the scientific realists, including Andrea del Castagno and Paolo Uséllo; Fra Filippo Lippi, the founder of the poetical school; and the second generation of the scientific realists.

The Executive Committee of the building fund of Truro Cathedral met on Monday under the presidency of Lord Mount-Edgcumbe, Lord Lieutenant of Cornwall, and decided that sufficient money had been subscribed to justify them in giving orders for the completion of the nave and west front. This will complete the portion of the structure which has been erected in memory of the late Archbishop Benson. At the conclusion of this work over 159,000*l.* will have been spent upon the cathedral, and there will only remain to be added the great central tower and two western towers, estimated to cost a further sum of 15,000*l.*

In Memory of the late King Humbert, who was in the habit of assisting the workers of Ravenna engaged in draining the Campagna near Ostia, King Victor Emmanuel has decided to make these men a donation of 150,000 lire.

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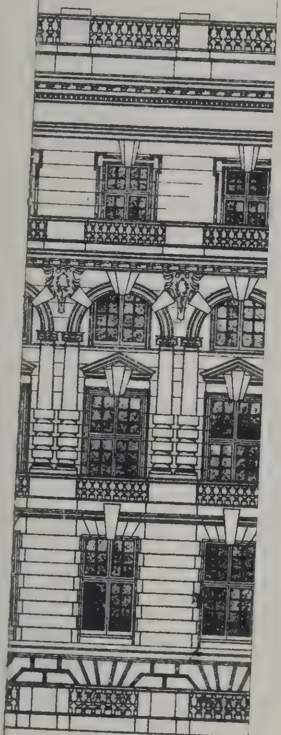

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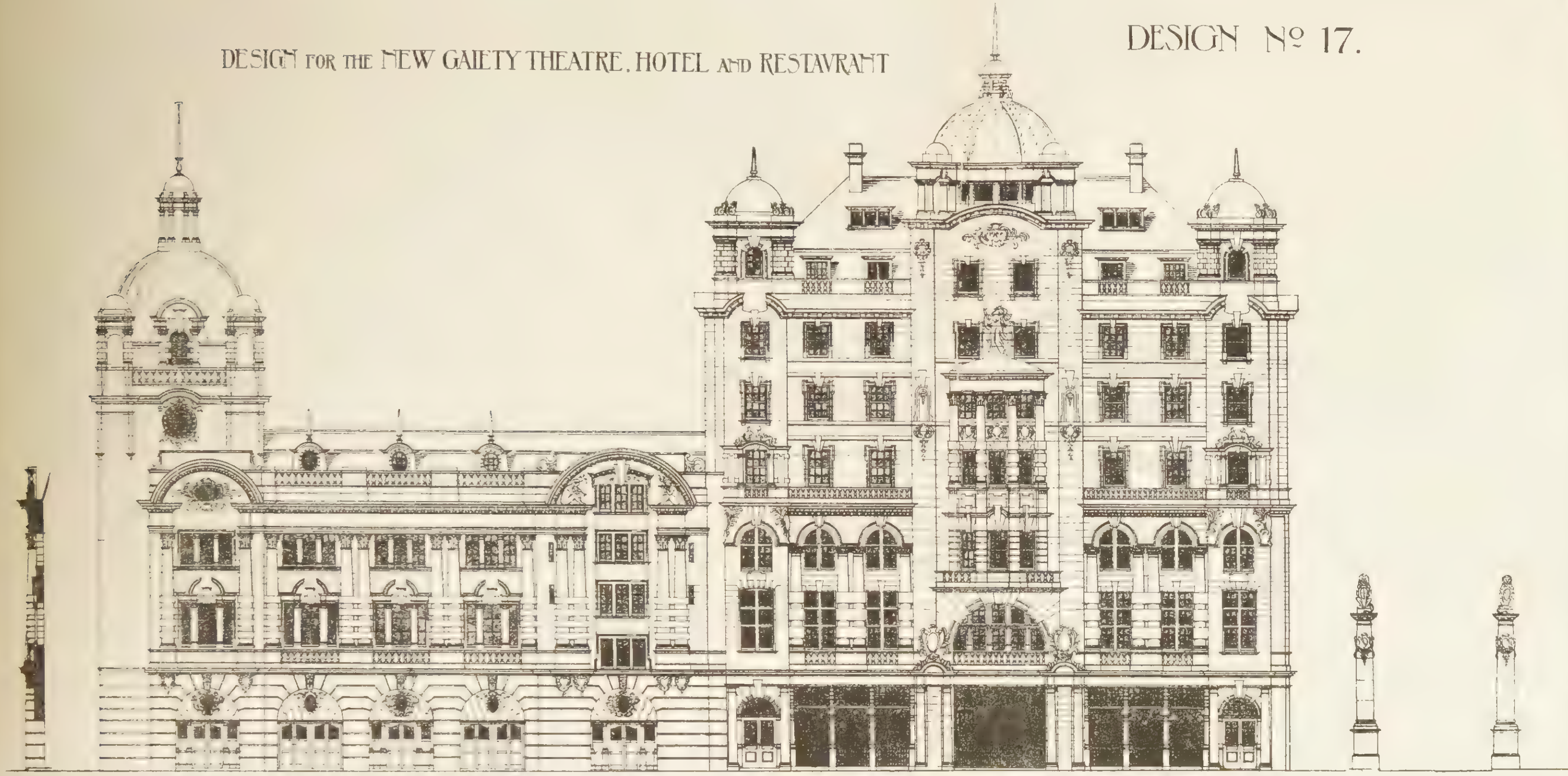
The Architect, Nov: 9th 1900

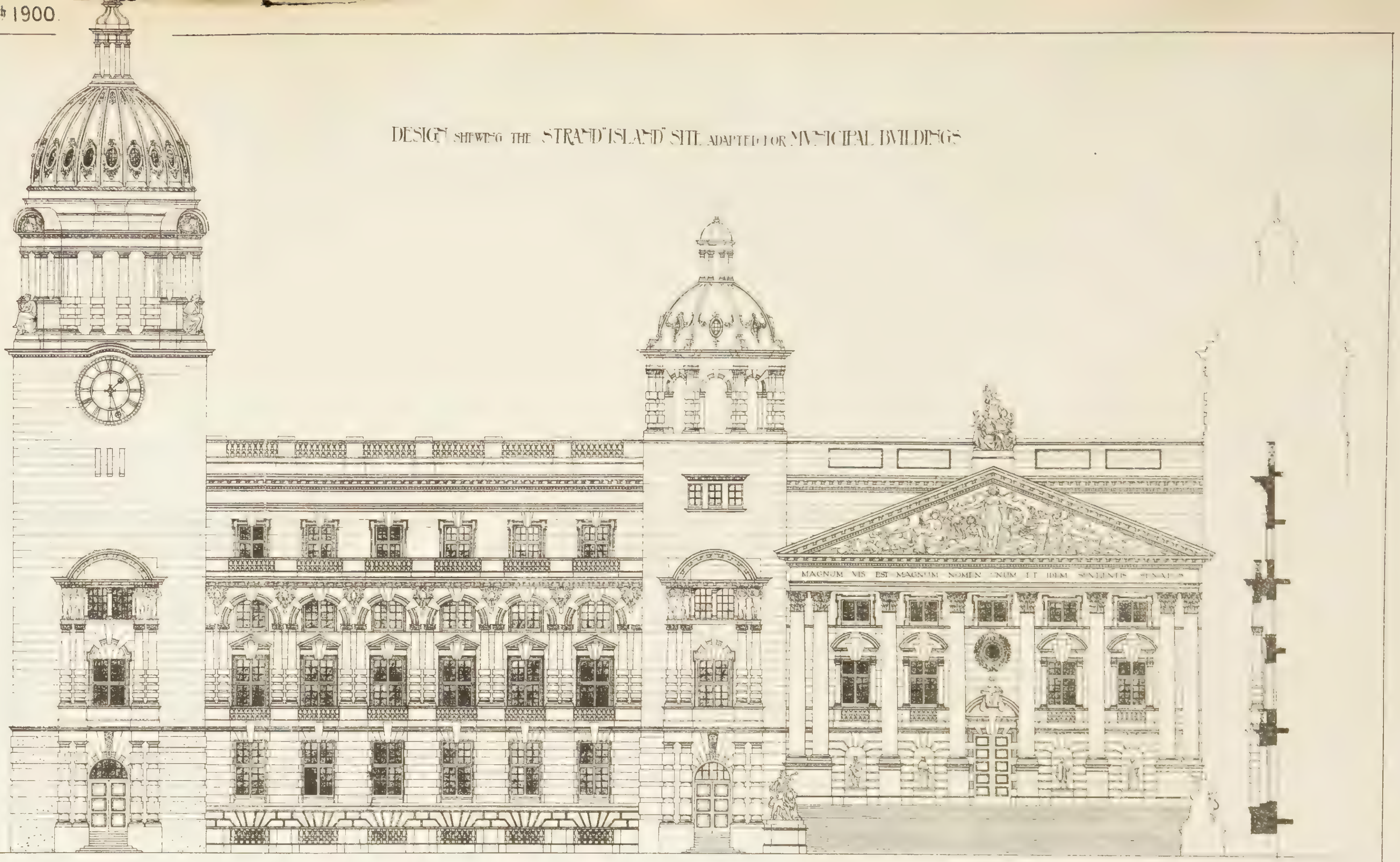
THE LONDON COUNTY COUNCIL
HOLBORN AND STRAND IMPROVEMENT

DESIGN No 17.

DESIGN FOR THE NEW GAIETY THEATRE, HOTEL AND RESTAURANT



DESIGN SHEWING THE "STRAND" "ISLAND" SITE ADAPTED FOR MUNICIPAL BUILDINGS



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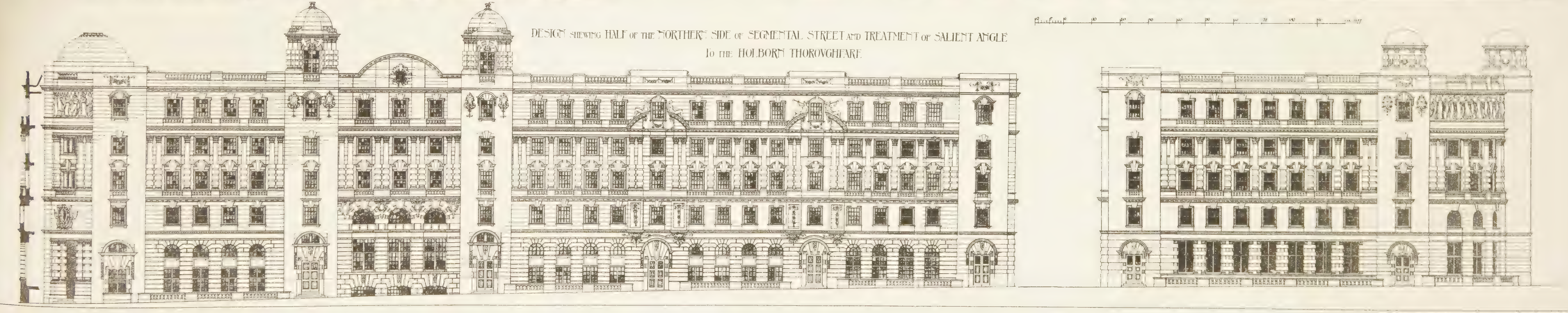

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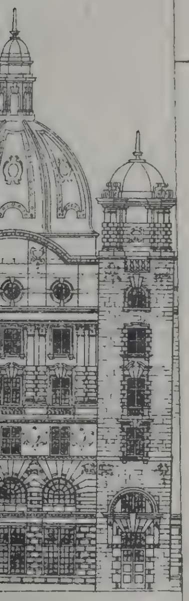

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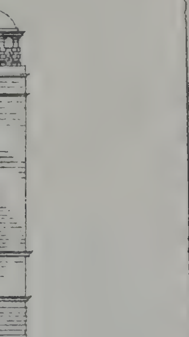

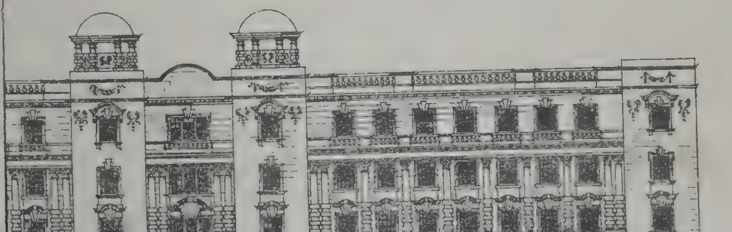

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THE LONDON COUNTY COUNCIL
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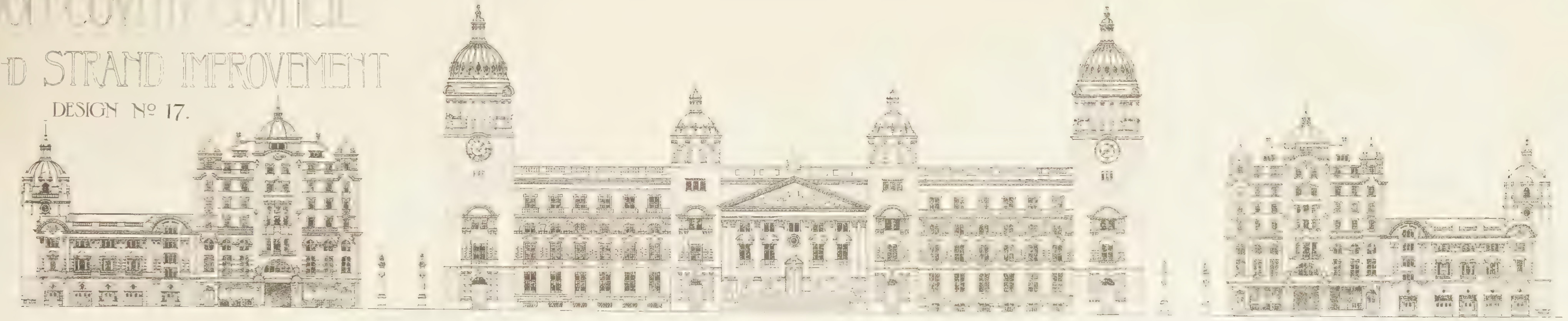

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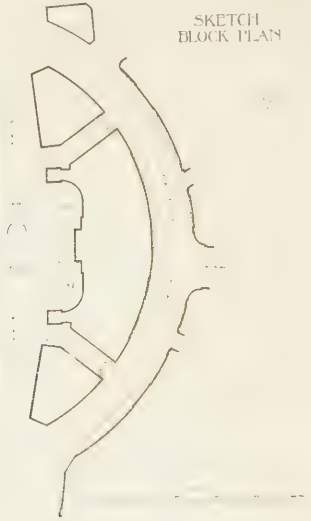

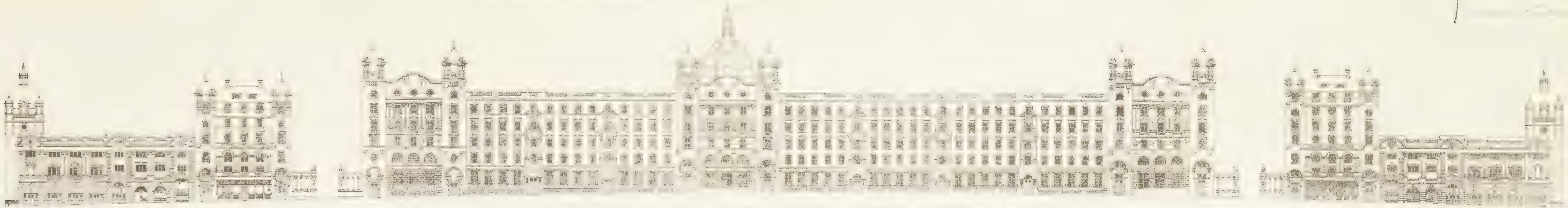

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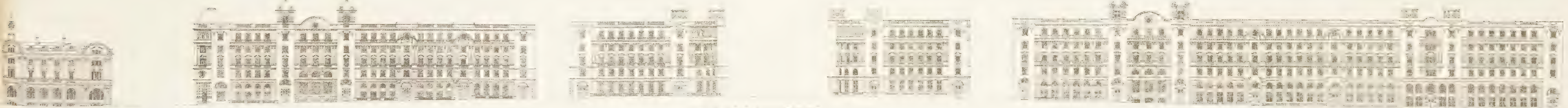

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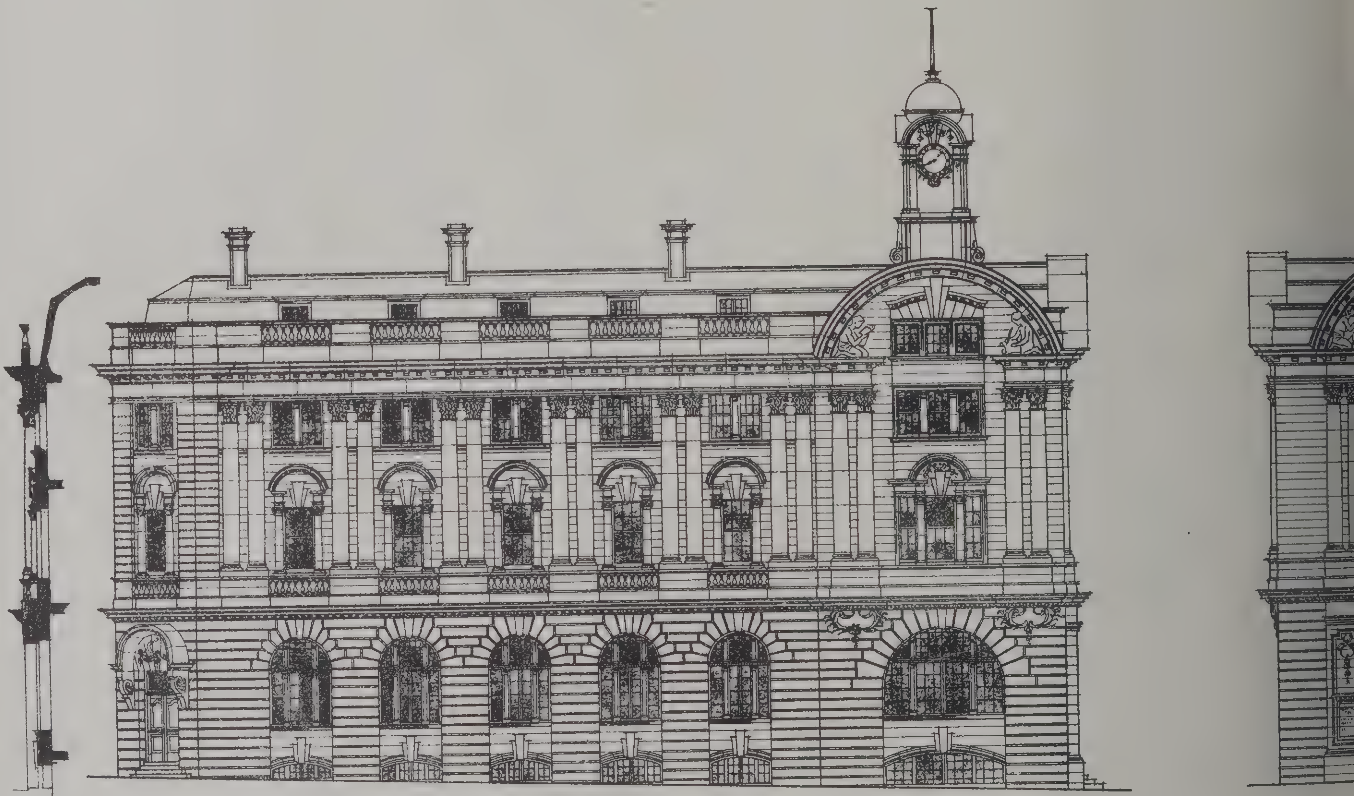

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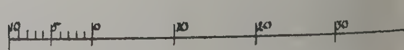

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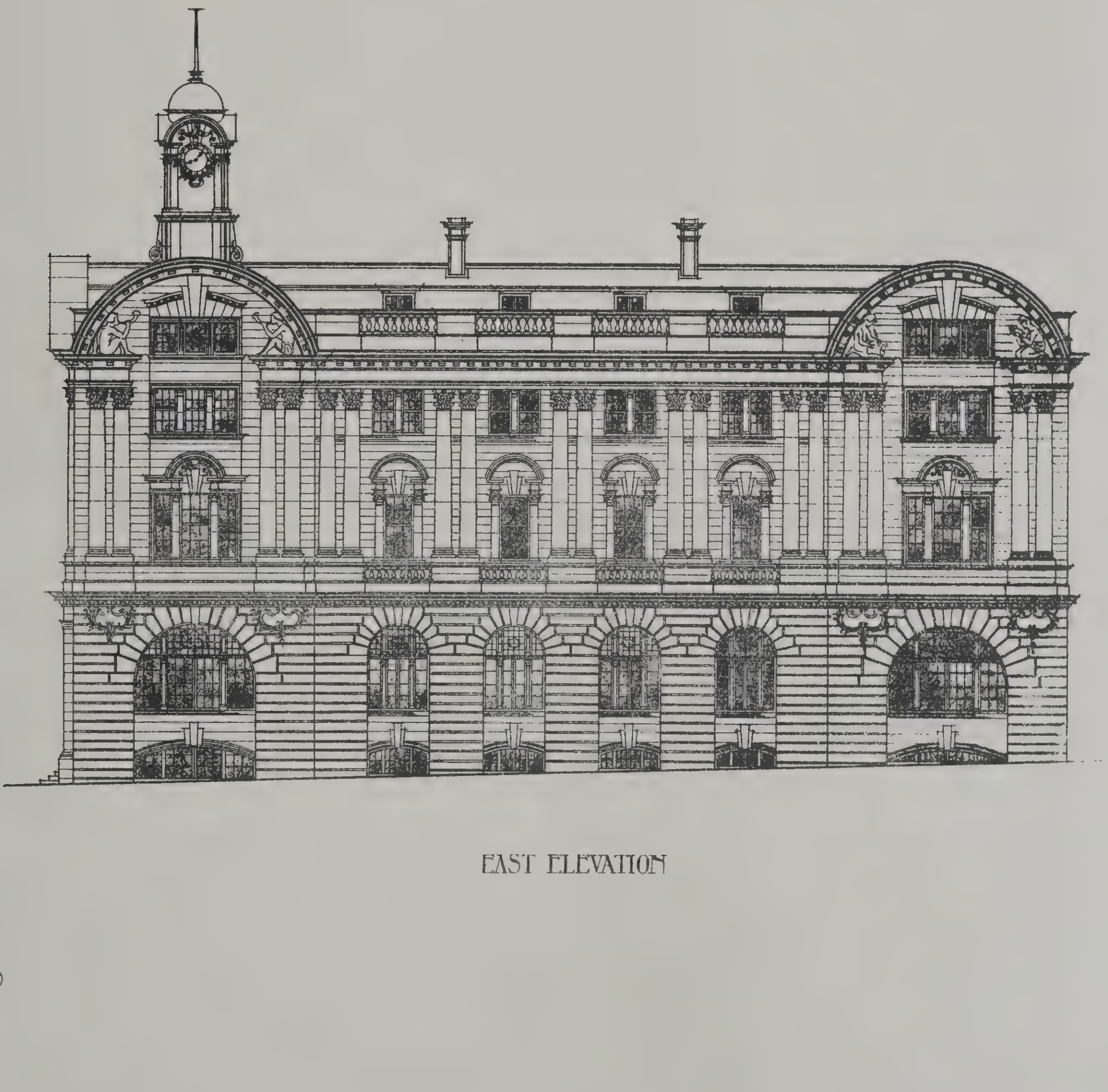

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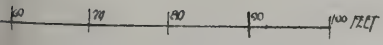

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The Architect.

THE WEEK.

The new Lord Chief Justice has given a decision in a question of an architect's arbitration which augurs well for his future administration of the business in the High Court. There was some novelty in the circumstances. At the beginning of 1899 William Eaton, a contractor, of Derby, agreed to erect a building in the course of three months according to plans by Mr. Arthur Eaton, architect. Although they bore the same name there was no relationship between the two. The builder was liable to the payment of a penalty of 10*l.* a week if the contract was delayed. It turned out that the works were not completed until October, which made a delay of twenty-eight weeks. The building owner expected to see the contractor mulcted in fines, and he was therefore surprised when a final certificate was presented to him in which no account was taken of the penalties incurred. On remonstrating with his architect, Mr. Arthur Eaton informed him that the subject had been thoroughly investigated, that the builder had completed the contract and the amount of the certificate had to be paid. An application was accordingly made in the Court of Queen's Bench to have the certificate set aside, on the ground (1) that the arbitrator had misconducted himself in that no proper judicial investigation of the matters in dispute was held by him in the presence of the parties; (2) that no evidence was taken by the arbitrator except that of William Eaton, and that the applicant was not given an opportunity to tender his evidence, to call witnesses, or to cross-examine Eaton; and (3) that the arbitrator did not make his award within three months. There have been judges in the Queen's Bench Division who would make short work of such an application, and many people who were present possibly anticipated that they were about to be regaled by the particulars of another instance of an architect's misdeeds. They must have been taken aback when the Lord Chief Justice quietly asked whether there was any objection to the case going back to the architect for reconsideration. As one was not forthcoming, his lordship at once decided that the case should be sent back to Mr. Eaton, who was to settle the whole matter in dispute, including the action which had been commenced. One result of the decision will no doubt be that angry clients will hesitate to bring actions precipitately against architects in Lord Alverstone's Court.

We have so persistently insisted on the necessity of an architect's position as agent of the employer or building owner being made clear to everybody who supplies materials or work for a building, objection has been raised to what we said on the ground that too much was made of the principle of agency, and not enough of the common sense which characterises the greater number of people who are associated with building trades. The architect's position is no doubt generally known, and he is regarded as a man who holds a difficult office, but who will not sacrifice his principles to please a building owner, or to gain illicit profits for himself. But people who supply materials, or who may when they like appear as disinclined to accept an architect's statement, are not easily to be convinced. One of them may say, "I imagined that the architect, according to modern custom, was the principal promoter of the building scheme, and from his manner of acting it was quite evident that his interest in the undertaking was not confined to a 5 per cent. commission." Now, in such a case who can demonstrate that the speaker is not sincere? It then follows that the architect can be treated as a building owner and made responsible for debts which he had no intention of incurring. A recent example occurred in Mr. Justice Grantham's Court in the case of Vaux *v.* Wimperis & Arbour. The plaintiffs, who are engineers and manufacturers of heating apparatus, sued the defendants for 238*l.*, the balance of account for hot-water pipes supplied to the Palace Theatre at Blackburn, of which Messrs. Wimperis & Arbour are the architects. Plaintiffs deposed that they were asked to send in an estimate for the heating apparatus of the theatre while it was in course of construction by a syndicate known as the London and Lancashire Company, Limited. Counsel for the defendants maintained that the party interested in its promotion, and therefore liable, was the London and Lancashire Company, and not the defendants, who were their architects. The company, it appeared, was in liquidation. Mr. Justice Grantham said he had no doubt defendants were liable. Architects ought to be careful when they gave orders to make it clear that the goods were not for themselves. Judgment must be for plaintiffs for the amount claimed, with costs. An application for leave to appeal was refused.

Although the political relations between France and Italy may not always be satisfactory, the Italians cannot forget their indebtedness to France for helping to create a united Italy. But it is not easy to express gratitude without exciting international jealousies. The closing of the Paris Exhibition afforded, however, one of those opportunities which are supposed to be more neutral than national. The Italian exhibitors decided to present a testimonial to the city of Paris which would be a memorial of their feelings during the present year. With that object, an album has been prepared containing a dozen exquisite examples in miniature-painting, all of which typify the resurrection of Italy. They are valued at over 100,000 francs. The album will be deposited in the Municipal Museum, and will recall the ties which have united France and Italy during many years. The gift has been accepted in the spirit in which it was offered, and we hope it will have a beneficial effect in helping to overcome the ill-feelings which have been fostered by enemies of both countries.

The interesting paintings lately bequeathed by Henry Spencer Ashbee, F.S.A., are now exhibited in the picture galleries of the Victoria and Albert Museum. The collection, which comprises 204 works, mainly consists of water-colour paintings, including early works by such men as J. R. Cozens, William Payne, Thomas Hearne, J. M. W. Turner, R.A., H. Edridge, A.R.A., T. Rowlandson, John Varley, R. P. Bonington, George Chambers, David Cox, Samuel Prout, William Hunt, P. de Wint, W. Clarkson Stanfield, R.A., and George Cattermole. Among the more modern works are drawings by Sir John Gilbert, R.A., H. G. Hine, Carl Haag, E. M. Wimperis, T. Sidney Cooper, R.A., Charles Green, J. Fulleylove and Sir James Linton. There are also fifty water-colour drawings by L. F. Cassas for "Voyage Pittoresque et Historique de l'Istrie et Dalmatie," published at Paris in 1802. The oil-paintings include works by Sir A. W. Callcott, R.A., G. S. Newton, R.A., A. V. Copley Fielding, John Linnell, Sir John Gilbert, R.A., and T. Sidney Cooper, R.A.

It is generally supposed that the origin of the "Rows" in Chester is to be traced to the efforts made in the old racial commotions to obtain a position which was comparatively secure. From its situation Chester was always liable to attacks. Welsh and Saxons could find no better way for settling their differences than by fighting in the streets. To obtain an elevated platform with numerous points of vantage was therefore ardently to be desired. While everybody admits the picturesqueness of the Chester Rows and the interest they impart to the city, it is strange that so few efforts should be made to imitate the arrangement. At a time when novelty is sought after the neglect of such picturesque planning must be attributed to some defect that is not easily to be overcome. Sir Frederick Bramwell is justified by his long experience as a consulting engineer and his connection with various civic improvements in suggesting that the Rows should be reproduced in connection with the Strand improvements. But the upper roadway being only a local feature it should be considered as an exotic in London. The experiments which have been made in some large buildings to combine external corridors, offices and rooms have not been sufficiently successful to warrant repetitions of the plan. What can be more dreary than the system which is adopted in the Victoria Buildings, Manchester?

THE PROCESSION IN ART.

So many processions have during the present year passed through the streets of London, it is surprising that the advocates of improvements have not utilised the overcrowding and consequent risks as arguments in favour of their projects. In the chief continental cities provision is made for the accommodation of military and civilians in marching order, and there can be no question of the advantages which have followed. A spectacle becomes more important when it is carried out on an adequate stage, and anyone who can recall the march of the German troops through the Champs-Elysées will admit that the pain was increased by the invaders passing along so noble an avenue. If the French troops came back in triumph over it the satisfaction would also be magnified. In London and in most English towns a provision for that sort of display was never considered. Wren, when he was laying out the plan of new London after the Great Fire, never gave a thought to the Lord Mayor's processions. An alderman or a councillor would in our time expose himself to ridicule and risk his position if he were to advocate an improvement because it would give more opportunity to manifest the greatness of the City Fathers on November 9. It must also be allowed that, in spite of their irregularity, the streets of London are not so ineffective on joyous occasions as a foreigner accustomed to straight streets would imagine. The absence of uniformity in the Strand, Fleet Street and Ludgate Hill makes decorations appear more successful than those displayed in streets with fewer bends and turns, and where the flags appear to be arranged in rigid lines. Cheapside is perhaps of more importance in an architectural sense than Fleet Street, but it does not look so well on those holidays when bunting is largely displayed.

Although it may appear strange for Englishmen at the end of the nineteenth century suddenly to take so much pleasure in pageantry, it is well to know there are precedents enough for displays of the kind in the annals of our Mediæval towns. We lately described the arrangements that used to be made in Lincoln for the creditable organisation of processions and other celebrations on religious festivals. If an alderman was unable to possess a cloak or a gown of a quality which corresponded with his rank in the city, he was provided with one in order that the reputation of Lincoln might be upheld. Loyal citizens used to expend large sums upon costumes which were to be worn on such occasions by poorer inhabitants. In fact, the Mediæval records which relate to preparations for processions on church and other holidays show there was as much anxiety in England as in Italy, where the shows were supposed to have attained the utmost perfection.

It was impossible in England to give adequate representations either by painting, sculpture or illuminations of the pomp and decorum which were common and the general interest which was taken by the inhabitants or by the members of particular guilds in order to insure success. In ages far more remote pictorial records could be obtained, and were apparently the earliest works of illustrative art on a grand scale. We have examples from Assyria, Egypt, Persia. Triumphs of kings, long relays of prisoners, captives representing the trades and occupations of a conquered country continue to be seen, and bring back the past so vividly, it seems to be separated from the present by only a short interval.

In those countries space was of little account, and the largest areas were available for the display of sculpture and painting. But in Rome, where economy had to be considered, the representations of the Dacian war, which was equivalent to a procession, had to be represented spirally round the shaft of a column. On the column of M. Aurelius we see incidents of the war against Marcomanni. These experiments are of great interest, and assuming the change in character was commenced by the Romans, they deserve great credit for it. In the triumphal arches processions are sometimes introduced, and what else was to be expected in a city where the great triumphs were sometimes miles in length? The grandiose character of the people was especially displayed in those representations. They also suggest the difference with the Greek mind, for such ceremonies as the Panathenaic procession would have been of little account in Rome. While the Romans were Imperial in their notions, the Greeks are more reminiscent of possessing village communities.

The glowing descriptions in the Apocalypse of the heavenly processions were caught at by artists as affording a theme to which the greatest genius was hardly equal. The solemn series of figures of saints in Ravenna and elsewhere in Byzantine churches, what are they but processions, although the plan adopted for the representations is rather formal, in order that the figures might appear to be facing the congregations? Indeed, so strong was the influence of that class of subject that one of the ancient divines suggested the universal use of the friezes by asking, What was all history or all ecclesiastical annals but an account of a vast procession which was still passing before our eyes?

It was not to be supposed that so vivid an idea should be confined to ecclesiastical subjects. Laymen were no less qualified to take part in those typical collections of human life. Consequently on bridges especially, and various other timber structures, the carvers were allowed to display their fancy by representing "the long procession still passing to and fro; the young heart hot and restless, the old subdued and slow." The peculiarities of Gothic churches were also turned to account for a like purpose. Just as a troop of ecclesiastical dignitaries went on distant pilgrimages in the hope of averting disaster, or to seek the clemency of a monarch who was an enemy of the Church, so the various divisions into which a great building was cut up were admirably adapted to the processions of long lines of members of confraternities and guilds. In fact, the full utility of a Gothic church does not become manifest until we have seen it on the occasion of one of those displays when by the dim light of candles carried by the members long vistas of mysterious space become darkly visible, and companies of men in various ecclesiastical habits are to be seen going through motions which are always dignified.

The popularity of processional subjects is apparent when we find so great an artist as Mantegna was invited to paint a series relating to Julius Cæsar in the Theatre of Mantua. There is so much detail in the pictures, the artist must have spent many a day over the composition. But the labour was profitably employed, for the picture is admitted to be one of the world's masterpieces. Rubens made sketches of portions of Mantegna's frieze, and as he was closely associated with the production of pageants his copy must have been of practical value to him. Rubens was not satisfied with painting processions; he also organised them and made all the preparations. For one of the Imperial marriage processions he fashioned several temporary triumphal arches, and his designs for them are the best evidence we possess of his acquaintance with architectural principles. The character of one of those shows can be judged from the plates of the *Triumph of Maximilian* by Burgmair. In them imagination was set at work to discover figures that might be strange but would yet be appropriate. From their numerous guilds and trade corporations the Low Countries possessed facilities for organising the shows beyond most European countries. Italy, however, was the land where processions attained a beauty by which they became quite unique, for what the Italians did with apparent ease seemed to be unapproachable elsewhere.

M. Taine has pointed out that Italy possessed not only some painters of superlative genius, but almost countless artists who in any other country would be recognised as masters. They were brought into close contact with the ordinary people, and as a consequence an affection for art and an interest in all its manifestations was displayed in the smallest petty State. In the little court of Urbino we learn that a magnificent palace had been erected; indeed, some considered it was the finest in Italy. The rooms in it were sumptuously adorned with silver vases and hangings of golden silk. Pictures by Pietro de la Francesca and Giovanni Santi, Raphael's father, adorned the walls. Books were to be met with which had been sought in all quarters of Europe. In the daily life of the courtiers ceremony was disregarded. Invention and originality were more respected than wealth or high birth. Concerts, dances and other entertainments were every day to be enjoyed. But if art in its various phases might be looked up to, there was still the utmost reverence for the beauties of nature, which were displayed in the landscape around the palace. In the court of

Urbino Italian life had reached a standard of an almost ideal kind. But the numbers who could have participated in so refined a life were necessarily limited. The relations between Italians of all degrees were so friendly, it would not be considered strange if some of the people who lived near the palace, and who followed humble avocations, occasionally witnessed the entertainments at a respectful distance. But in other parts of Italy the gratification of all classes of the people was recognised as a State duty. In the first place, a stout villager might be able to serve as well as any mercenary soldier, and it only required some fortunate effort in which chance or good fortune would assist him to become a captain, and thereafter a leader of enterprises for which munificent awards were to be obtained. As a result the utmost magnificence was shown by the princes when travelling. In that way they made a spectacle for the people, and no doubt attracted men to serve under them. When, for instance, the Duke of Milan visited Florence in 1471, his retinue consisted of 100 men-at-arms, 500 infantry soldiers, 50 lackeys on foot clad in silk and velvet, 2,000 gentlemen and domestics, 500 couples of dogs, and an immense number of falcons, the excursion costing the Duke 200,000 ducats in gold. The Cardinal de San Sisto travelled in such state that he was taken for his brother the Pope. When Lucrezia Borgia entered Rome she was attended by 200 ladies, all mounted, and each one was richly clad and accompanied by an equal number of gentlemen. Even the Pope expressed regret that his dignity should prevent his witnessing a pageant in Florence.

No doubt all this costly display served political purposes, and, indeed, Machiavelli does not condemn an expenditure which some small principalities could only sustain by many sacrifices. But it is easy to realise what an important impression was made on the minds of artists when they saw unfolded before their eyes such magnificent spectacles. Take one devised by Lorenzo de Medicis, in order to assert the supremacy in magnificence of a company of which he was chief over one he considered a rival. The commission for the organisation of the procession was given to Jacopo Nardi, and there were six representative cars. The first typified the age of Saturn and of Janus. The deities were living men, but around them were subjects as animated as life which were simply painted, the shepherds being clad in the traditional garb; all the harness suggested the character of the attendants, the stirrups were moulded in the form of wild beasts. The second car was dedicated to Numa Pompilius, the second king of the Romans. He was attired as a high priest, surrounded by books connected with their worship and the ornaments and instruments used in the sacrifices. The assistant priests were mounted on beautifully equipped mules. Titus Manlius Torquatus was the hero of the third car. The fourth was commemorative of Julius Cæsar. An effort was made to procure elephants to draw the car, but as they were not to be obtained, buffaloes were "made up" to represent them. The fifth car was devoted to Augustus Cæsar, and the sixth to the Emperor Trajan. These were followed by a car which was symbolical of the Age of Gold; it was painted by Pontormo, with figures in relief by Baccio Bandinelli. One incident connected with this car is often referred to in elementary books on natural philosophy and physiology. It was considered necessary to suggest that the Age of Gold followed the Age of Iron; with that object a little boy was introduced, and to avoid all doubt as to who he was, he was gilded all over. The wise physicians did not realise the danger of stopping the pores, and after the pageant the unfortunate child succumbed to his grandeur. Vasari dwells at great length upon the details of the cars and of the robes of the occupants. But no catalogue can express the delight with which such an animated spectacle was witnessed by the Florentines. The spectacle was only one of many, and these triumphal processions finally became indispensable to the citizens. We may consider them as being too frivolous to occupy the attention of serious people, but it should be borne in mind that there was a tendency in Florence to be over gloomy, and the pageants of the Medicis acted as correctives.

If judged by such a standard, what must be thought of the elements of the late London pageants which so many people crowded to see? The interest in the Griffin which marks the entrance to London could only be enhanced by covering a casing with blue cotton velvet of a colour that made the eyes ache, with a capping of virgin cork. Much other official decoration was of the same character. The minds of people cannot be improved when in such arrangements, that were often unworthy of a penny show, they were supposed to behold examples of the artistic skill which is controlled by the wealthiest corporation in the world. Let us have processions frequently, but for the sake of common sense and good taste let them be different to those which were lately seen in the principal streets of the Metropolis.

AMERICAN ECCLESIASTICAL ARCHITECTURE.*

The point of view from which Mr. Kidder judges churches and chapels in the United States is described by himself in the following words:—"With regard to the architectural expression of the building the author has said but little, and that merely in a general way. Whether the design will be good or bad will depend almost entirely upon the capacity of the architect to give a proper expression to the building, limited to a greater or less degree by the site and the dictations of the building committee." Instead therefore of disquisitions upon the merits of the various styles of ecclesiastical architecture, Mr. Kidder supplies many plans and details of construction, "with a view of furnishing suggestions to the architect or layman rather than for the artistic effect." America contains varieties of designers, and in out-of-the-way districts the places of worship have to be designed by zealous, if untrained, workmen and amateurs. But so long as they can create a commodious and comfortable building the congregations are satisfied. It is also necessary to provide for congregations who do not care to follow the ritual of old worshippers. Non-liturgic churches have of late years been produced in large numbers, and arrangements have to be devised which may be novel, but which are likely to be transformed before many years pass for something still more novel.

The peculiarities of the position are shown by the directions that are given to building committees:—First, organise according to the law of the State and the discipline of the church. 2. Secure the best possible site on which to build. 3. Provide the means to build without embarrassing debt. 4. Secure suitable plans prepared by a competent and experienced architect. 5. Form a building committee of not more than five persons. 6. Arrange for the personal supervision, whenever possible, of the architect. 7. Allow of no change in the plan when once fixed on. Lastly, let every transaction be recorded. Although no particular style is selected for universal adoption, the advice given in this connection must affect the choice. No shams or substitutes of construction must be permitted. But Mr. Kidder lays great stress on the fact that Gothic is more suitable for a religious building than any of the other styles. Not that it has in itself any peculiarly sacred influence, since it is frequently used for secular as well as ecclesiastical structures. "It is feeling that makes a structure Christian," and Gothic being so intimately connected with Christianity it very readily lends itself to making a religious impression on those entering the doors. It has been found in America as in England that nothing succeeds so well in churches as Gothic. But in dealing with the most important points in building a church, such minor details as comfort should not be passed over, for "Christian art and architecture are not incompatible with a well-arranged and comfortable church." Americans have become exaggerated in this respect, and it is owing to their treating churches as audience-rooms rather than as places of worship, that they have been, as a general rule, less successful in their ecclesiastical than in their commercial and domestic architecture. Care should be taken that there is nothing in the design and style which would be incongruous with the beliefs of the congregation.

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* *Churches and Chapels: their Arrangements, Construction and Equipment.* Supplemented by plans, interior and exterior views of numerous churches of different denominations, arrangement and cost. By F. E. Kidder. (New York: William T. Comstock. London B. T. Batsford.)

The amphitheatre church requires for use by the Church of England a new and different treatment. Particular localities sometimes have styles peculiarly suitable for them. For Texas and Southern California, Spanish Renaissance or the styles developed in Italy seem more appropriate than Northern Gothic or Romanesque. There are a great many sketches of plans and views of interiors, and the reader cannot help admitting that much is to be seen which, if not a faithful following of precedent, will provide for everything required by American services. It is owned that, with all the attention given to the subject, America is still lacking in details which can increase the comforts of Sunday worshippers.

Mr. KIDDER gives ample descriptions of the different methods of construction which are most generally employed, and he occasionally varies the ordinary routine by deriving examples from old work in France and England. The practical man becomes evident from the precision displayed in describing the details, but without illustrations it would be impossible to make the reader understand the tendency of Mr. KIDDER's instructions. The following suggestions are not, however, necessarily local in their application:—

> An important point to be considered when designing a church is danger from fire. Few churches have the means to construct a fireproof building, and the few accidents that have occurred in churches from fires would not appear to warrant the expense. Much, however, can be done to prevent the rapid spread of fire in case one should get started from the inside. All vent and hot-air ducts should be made of incombustible material, and especial pains should be taken to protect the boiler-room, so that fire cannot originate there. The walls of the boiler-room should be of brick or stone, and the door leading to it protected by tin. The ceiling should either be constructed of incombustible materials, or, if the expense necessitates the use of wooden beams, they should be lathed on the bottom with a metal lath, and covered with a good coat of plaster. Much may be done in any church that has plastered walls and ceilings to prevent the rapid spread of fire, and at a comparatively small expense, by the intelligent use of metal lathing. It is especially desirable that the under-side of all stairs and all the galleries be protected in this way, and the money would be wisely spent if metal lath were used throughout the building.
>
> Another thing that is worthy of much consideration is to provide means for decorating the church at Christmas, Easter and other festivals without marring the walls. Just before the building is decorated the most likely schemes for decoration should be considered, and the small hooks or screw-eyes placed where they will be most convenient for securing the decorations. The plastering can then be patched around them if necessary, and when the walls are decorated these hooks will not be noticed, and they will greatly facilitate the putting up of the decorations and prevent breaks in the plastering that cannot well be remedied when the building is decorated.

In his chapter on acoustics Mr. KIDDER mainly relies on the conclusions drawn by Dr. E. H. KELLY, of Buffalo. The author considers that "almost any floor plan that one would be likely to adopt for a church may be made satisfactory, acoustically, if the height is properly proportioned, and the walls, ceiling, fittings and furniture constructed on correct acoustical principles. Nevertheless, it is much easier to insure successful results with some plans than with others, and it is the wise course to choose as good a plan as the controlling conditions will admit." The building that is accepted as the "most acoustically perfect structure of any magnitude in the world," is the Mormon Tabernacle at Salt Lake City. On plan it is oviform, but it is admitted that the oval plan is more expensive than the ordinary plan, and does not so well lend itself to ecclesiological arrangements. For a rectangular audience-room the following proportions are found to be successful in America:—"Make the height of the room equal to one-half the width, plus the distance from the speaker's mouth to the floor, and the depth (measured from the speaker) from one and one-half to twice the width, but not greater than 90 feet. The relation of height to width appears to be more important than than of width to length."

There are also chapters on lighting, heating and ventilation, church bells and tower clocks, and finally views and sections of forty-four churches and synagogues are furnished. The book should be in request in America, and from the interest given to constructive and other details it will enable English people to consider the difference between English and American practice. In the United States there is little heed given to mysticism, and the most mysterious effects, if they were forthcoming, would be duly assessed at a fixed value. The novelty of considering ecclesiastical buildings in that way is rather strange to an Englishman, but it has to be accepted. The matter-of-fact American church-goer is, however, liberal in supporting his religion and in aiding the poor.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A MEETING of the Institute was held on Monday evening last, Mr. William Emerson, president, in the chair.

Professor LANCIANI, of Rome, delivered a lecture entitled:—

The Architectural Results of the Latest Excavations in the Forum.

The lecturer explained that the remarkable success of these excavations in a district which had been so often searched and laid bare was due to the fact that former excavation had always stopped at the higher level of ruins. As soon as the pavement of a street, house or public building had been exposed to view, they were asked to stop, without being able to ascertain whether under those structures of the late Empire there were deeper and older strata of even greater archæological interest. As it was known that the Roman Forum and the region of the Sacra Via had been swept by fire and rebuilt, at least, four times under the Empire, it was at last determined to probe that sacred piece of ground down to the level of the virgin soil wherever it was possible to do it without injury to the higher and later structures. The results surpassed their most sanguine expectations, especially from the archæological and historical point of view. The architectural discoveries, too, though modest, nevertheless merited special notice. By means of a series of photographic lantern slides the lecturer explained the Forum and the Sacra Via, starting from the Comitium, and directing attention to and discussing the various objects of interest the excavations had brought to light. Nearly two years had elapsed since the finding of the monument which they had identified as the Heroon, or empty grave of Romulus. The controversy about the nature, date and object of the monument had been decided in their favour, and it was now admitted that this was really the identical monument raised in honour and in memory of Romulus at the time when Rome was still ruled by the kings. The deification of Romulus was not a late Greek fable, as some recent critics contend, but a fact proved conclusively by the recent discoveries. The Heroon is or was composed of six parts or elements, namely, (*a*) the cenotaph or empty grave, (*b*) the two lions which guarded it on either side, (*c*) the honorary pillar, (*d*) the stone inscribed with the *lex loci*, (*e*) the altar, (*f*) the sacrificial stone. The whole group was found embedded in layers of sacrificial remains, such as charred bones of victims, small graves, clay discs representing cakes, figurines of bronze, bone or clay, representing men and women in the stiffness of death. As the group lay at a considerable depth under the level of the Imperial Comitium, so its site was indicated by a square enclosure surrounded by a marble transenna and paved with black stone, the famous "lapis niger" of Festus and Varro. The cenotaph was found filled up with earth and decomposed organic remains, without any trace of a cinerarium or ossarium. This is in perfect accordance with the Roman tradition, the popular belief in the fate of Romulus. The abundance of organic matter in the earth which filled the grave was due to the practice, common enough in those times, of slaying the victims so that their blood might flow inside and give joy and satisfaction to the spirit of the hero and appease his wrath. The mysterious and irresistible power of the same spirit was symbolised by one or two lions. The interest of this chain of discoveries culminated in the inscribed stele or pyramid still standing after twenty-six centuries on the identical site in which it was set up at the time of King Numa or King Servius. The inscription engraved on this rough block of tufa has been given the place of honour among the 95,000 epigraphic documents which have been collected all through the Roman empire for the "Corpus Inscriptionum." It precedes by a couple of centuries what was considered up to the date of its discovery the very oldest specimen of the Latin language and Latin palæography, the so-called cup of Dvenos now in the Berlin Museum. Mutilated as it is, and containing some 60 per cent. of words hitherto unknown, an interpretation of the inscription is at present impossible, but, judging from the signification of the words which have passed into the Latin tongue, the stele must have contained regulations issued by the king-high-priest in connection with hero-worship at the grave of Romulus. Continuing along the Sacra Via, Professor Lanciani referred to the results of the geological exploration of the ground, showing how the primitive path, which was irregular and winding, had gradually been transformed until, as buildings were erected on either side, it took a definite shape, and was made to turn four or five times at right angles. Coming to the newly-discovered monument, the Basilica Æmilia, the lecturer said they had learned by experience the possibility of this extraordinary fact—that a building of the first magnitude, like the Basilica Æmilia, proclaimed by classic writers the finest of its class in the world, could have been excavated to the very root of the foundations, deprived of its hundred columns, that tens of thousands of feet of its gracefully-carved marbles could have been burnt into lime or turned into new shapes and purposes without a single record being left of the Titanic deed of destruction. Having briefly sketched the history of the place, the lecturer said that they had now learned that the building must have been gutted and wrecked in the great fire of 283, under the Emperor Carinus, and that it was hastily and disgracefully restored by the Emperor Diocletian in the clumsy style which characterised the patchwork of the Decadence. They had also learned that whatever parts were left standing of the basilica at the end of the fourth century were pulled down to make use of the materials for the building of the church of St. Paul on the road to Ostia. The lecturer added, by way of consolation, that by tracing the lines of the foundation walls and by sorting the fragments of its architectural decorations, they had been able to reconstruct the original design in plan as well as in elevation. A drawing of the restoration, the work of Signor Giuseppe Gatteschi, was shown by the lantern. The Temple of Antoninus and Faustina, the next building described, had been freed by their latest operations from its ignoble surroundings, and also restored to its original height and to its original perspective point of view. The pavement of the Sacra Via, which runs in front of the pronaos, is 4 feet higher than the original one, and there were five steps of the original stairs buried under the Mediæval pavement. These steps have been uncovered, and the temple now appears in all the noble proportion of its original design. Discussing the Regia and its remains, Professor Lanciani dealt particularly with two interesting relics of the building, viz. the insula structure in the inner hall, and the store-pit or underground tholos. The former is suggested to be the part of the sanctuary in which the spears of Mars were kept, while the store-pit and the altar have been identified with the Ops Consivia, whose presence and worship in the Regia are attested by historians of early Rome. The spears of the Regia were venerated as the weapons of Mars. They were wooden rods with metal points, and two have actually been found in the present excavation. The chapel in which they were kept was a genuine seismographic observatory where earthquakes were observed and registered. Leaving the Regia the lecturer dealt with the House of the Vestals, describing incidents in its history and particulars about its architecture lately ascertained. Entering the cloisters of the Vestals the first monument met with is the pedestal of Claudia, the first and only princess of Vesta, who gave up her exalted position to embrace the Christian faith. Across the Nova Via one enters the newly-excavated colossal temple of the deified Roman emperors. Architects will find the temple a new and unexpected subject for study, so different are the plan and elevation of the building from any known design of a Roman public building and so wonderful is its preservation. The building does not stand isolated on its own ground, but is connected with the Palace of Caligula and with the state stairs that descend to it down to the level of the Forum. It was already known from the discovery of other such stairs in the palace that the imperial architects, possibly the emperors themselves, objected to steps, and that whenever the plan of the building allowed it they substituted for steps inclined planes with an easy gradient of six or seven in a hundred, interrupted by horizontal landings. The newly discovered descent from the Palace of Caligula to the temple of the emperors is designed in the same way. Lastly, the lecturer described the imperial warehouses for Indian goods brought to light in the excavations. This establishment, officially styled the Horrea Piperataria, was built by the Emperor Domitian about 84 A.D. for the storage of the spices named, and described by Pliny in the twelfth book of the Natural History. The warehouses were wrecked and gutted in the fire which destroyed the whole quarter of the Sacra Via in 191 A.D., a few weeks before the death of Commodus. Considering the happy results of the excavations Professor Lanciani said their thanks were due to the Italian Administration of the Antiquities and to their colleague, Commendatore Boni, for the scheme so cleverly planned and so skilfully carried through, and for the decision of the Administration not to stay the search at the level of the classic building of the Empire, but to excavate wherever possible the lowest and deepest strata, contemporary or even anterior to the foundation of Rome. By following this scheme he felt confident they would ascertain the true origin of Rome, and the nationality and stage of civilisation of its original settlers.

Mr. F. C. Penrose proposed a vote of thanks to the lecturer.

Sir L. Alma-Tadema, R.A., seconded the motion, supported by Sir W. B. Richmond, R.A., Professor G. Aitchison, R.A., and Dr. Alexander Murray.

FOURTEENTH-CENTURY ART.

A SERIES of six Hermione Lectures, established in memory of the late Duchess of Leinster, is now being delivered in the Jellicoe Hall of the Alexandra College, Dublin, by Mr. Roger E. Fry, B.A., who first took for his subject "The Characteristics of Fourteenth-Century Art, and the Change to the Style of the Fifteenth Century—Masolino da Panicale."

The lecturer, in the course of an interesting address, which was illustrated by means of lantern slides, said the standpoint from which he wished to view these paintings would be, as far as possible, purely æsthetic. The paintings, which were the relics of past ages and had survived so long, had, by the mere fact of their prolonged existence, acquired a certain claim to authority and respect which was altogether beside their intrinsic merits, and which it was exceedingly difficult to disentangle from them when they tried to analyse the impressions they made upon them. It would be important in dealing with these early works to strip them of all accessory advantages, and turn a deaf ear to their claim based on the ground of venerable antiquity. Let them take their chance in fair competition with modern works. In other words, he wished to put on the one side all the archæological interest and the sentiment which such subjects prompted one to indulge in. They would endeavour to look on these paintings as though they hung on the walls of a modern academy, and as though the names of the artists inspired no more respect than the names of Royal Academicians of the present day—he would not particularise any of them. The first and universal quality of every work of art was its unity. If they looked at the Italian art of the Renaissance as a whole, and contrasted it with modern art as illustrated by the work of the seventeenth century, they would be struck by this difference—that the unity of the Italian picture was a constructive unity, and the unity of the modern picture was perceived. He meant that the unity of the Italian picture was built up from within and pre-ordained by the artist, whereas the unity of the modern picture was a unity derived from nature. The lecturer then went into details to elaborate his theory, and gave numerous examples of its accuracy.

The second lecture related to "Masaccio, the Leader of the New Movement in Painting."

The lecturer, in the beginning of his address, which was illustrated by numerous beautiful lantern slides, said the early death of Masaccio deprived the world of the complete development of one of the most remarkable geniuses that even Florence ever produced. He made the link between Giotto and Leonardo da Vinci, and his survivors went on with different conceptions of art. Raphael, in a sense, took up a broken thread, but under such different and less sympathetic conditions of contrast and sentiment that they still were left longing for what the world might have had if Masaccio had lived the longer. Brunelleschi, Donatello and Masaccio were the three geniuses of the new movement. Brunelleschi built the most perfect dome in the world in the fifteenth century. Michel Angelo himself could add nothing really new in sculpture to what Donatello had done, and had Masaccio lived Raphael's stanze might have been only an exquisite repetition. These three men were friends. Masaccio lived and died in poverty. The fact that he had such a large undertaking given to him as the decoration of the Carmine chapel in Florence indicated that there was no want of appreciation of his genius. The Carmine chapel was founded by Fellici Brancacci, who in 1422 was sent to the court of the Sultan of Babylon and left the decoration work in Masolino's hands. In 1425 Masolino left Florence for Hungary, and they might assume that Masaccio continued the work. As regarded the characteristics of Masaccio's work, the lecturer pointed out that this artist discovered the perfect construction of picture space and unity of light and shade. These qualities, combined with his sense of dramatic significance of events, made him comparable with Giotto. Splendid illustrations were shown in the various frescoes and panels which adorn the Carmine chapel, and also of the decorative work which is found in the church of the Trinity at Santa Maria Novello. In conclusion, the lecturer closely criticised the execution of these works, and made interesting comparisons between the styles of the different Florentine artists.

The third lecture treated of "Fra Angelico: His Acceptance of the New Ideas."

Mr. Fry held that Fra Angelico was the most unquestionably religious of Italian painters. He was, when he had finished his apprenticeship, actually in the first rank of the new movement. The subject of the Annunciation had a peculiar fascination for him, and his treatment of it was illustrated by the lecturer by means of several limelight views. Fra Angelico was a great master of landscape. His forms expressed the abstract idea rather than the actual appearance. He had a very strong feeling for perspective, and showed a consistent treatment of light and shade, though the latter was treated in such an abstract way that it had none of the suggestiveness of Masaccio's chiaroscuro. An altar-piece done for S. Dominico, and which was now in the Louvre, was one of his most celebrated works. It was an exquisite and altogether delightful conception of the Coronation. He treated the Virgin's figure with a simplicity which was almost daring, but the single long sweep of the drapery from the shoulder to the step on which she knelt was beautifully expressive of the idea of purity and humility. Although led more or less by temperament to neglect them, Fra Angelico had naturally very great aptitude for the mathematical and scientific aspects of art. The limits which his purely devotional attitude imposed on his imagination were clearly seen in his treatment of the *Last Judgment* in the Academy at Florence. For the church of the Trinity he executed a great altar-piece, which was now in the Academy. In it he showed the opposite extreme of his art to that of the frescoes of the cells of San Marco. In the anatomical study of the Dead Christ, in the perfectly realised monuments of the figures, the structural and scholarly disposition of the drapery, above all in the study of complicated and foreshortened movements, the work came nearer than anything they had yet seen to Masaccio's manner. Fra Angelico was a man who possessed to an extraordinary degree the peculiar Florentine gifts of mathematical precision of mind and a vigorously logical sense of proportion, combined with a delicate æsthetic sensibility.

In the fourth lecture of the present series Mr. Fry dealt specially with "The scientific realists, narrowness and intensity of their aims: Andrea del Castagno, Domenica Veneziano, Paolo Ucello." After referring to previous lectures and the artists whom he mentioned, he said that the ideals at which they aimed might be grouped under two separate heads, and although any definite classification of the artists into two schools with separate æsthetic aims and distinctive watchwords would be too arbitrary—something of an anachronism—still, two tendencies ran side by side through the art of the period, often, however, uniting in the work of a single artist. These two tendencies they might call the scientific and the typical. On the one hand they had quite a new curiosity about natural forms and the laws which governed their appearances, and on the other an intensification of that Boccaccian sentiment which began to emerge towards the end of the fourteenth century. The great representatives of the scientific idea were Castagno, Ucello, and others, while the artists who most perfectly gratified the unreflecting enjoyment of sensuous charm were the Medicean favourites, Fra Fillipo, Lippo and Botticelli. He would begin with the scientific realists. Much as they might delight in the works of their more lyrical contemporaries, it was, after all, this group of artists that were the backbone of Florentine painting and its greatest claim to distinction among the contemporary schools of Italy. They supplied that basis of logical severity to Florentine design which was only to be found in the works of one non-Florentine artist, Andrea Mantegna. The position of the scientific realists was, however, a curious and somewhat self-contradictory one. The lecturer then drew a distinction between two kinds of realism corresponding to two very distict attitudes towards nature between scientific realism and empirical realism. The art which arose with the reawakening of Europe in the twelfth or thirteenth century was not realistic in either of those senses. The artist began by learning a conventional type. This type a great artist like Giotto modified in the direction of greater naturalism, but not so much by direct copying of nature as by what his visual memory supplied from the constant observation of natural forms. The lecturer then spoke of the work done by the school of painters in French Flanders, and by those who began the idea of literal and exact copying of particular forms. The empirical realism was an essentially Northern conception of art—it pervaded the whole of the Flemish school, and it found an echo in Italy in the works of Pisanello, whose splendid drawings of animals showed rather a perfectly trained observation than a profound intelligence of the causes of the appearances which he recorded. But the genius of the Italians was essentially opposed to such a view of art. Their sense of style was outraged by the want of continuity of pervading rhythm in such imitative drawings; they were always designers before they were painters, and the Florentine genius in particular was too passionately logical to admit into a work of art anything which was not perfectly understood—anything for which the artist's intelligence and volition were not solely responsible. The lecturer then examined critically works of Florentine art about the year 1400 and later, and with the aid of the lantern he exhibited some splendid paintings and the works of eminent sculptors of the time. Amongst these were the "Expulsion of Adam and Eve from Paradise," the "Deluge," battle pieces by Ucello and others. A remarkable picture of a hunt by night, by Ucello, which is in the Taylorian Gallery in Oxford, was one of the finest of the series.

RUSKIN AND HIS FRIENDS.

An address was delivered last week before the Birmingham Ruskin Society on the subject of John Ruskin. The lecturer, Dr. F. J. Furnivall, founder of the Early English Text and other societies, was a friend of John Ruskin for fifty years. Mr. Howard S. Pearson presided. Describing his introduction to Mrs. Ruskin at an evening party in London, Dr. Furnivall spoke of her as a handsome, tall woman, with rather high cheekbones and dressed in a pink moire silk dress. Anyone who had seen Millais's painting, "The Order of Release," had seen Mrs. Ruskin as he saw her, though then she was younger and handsomer than she appeared in the picture. He had just read the first two volumes of Ruskin's "Modern Painters." Brought up in the country he had never taken any notice of its beauties until his eyes were opened by Ruskin's eloquence. Thenceforward he swore by Ruskin, and desired before all things to know him. He called on Mrs. Ruskin the day after the party, at Mr. Ruskin's house in Park Lane. While he was there Ruskin came in—a tall, slight fellow, wearing a buttoned-up frock coat, with velvet collar, a blue stock, with light hair, long and rough, and red whiskers His beautiful blue eyes seemed able to look through anything and everything. He spoke very kindly; he had a gentle manner and a winning smile. The only defect in his face was a pout in the lower lip, caused in early life by the bite of a dog. He wore patent leather slippers. After a delightful chat Ruskin invited him to his home at Denmark Hill to see his Turners. Taking off the green linen covers which protected the water-colours from the light, Ruskin showed the pictures and talked about them. He, Dr. Furnivall, remarked with regard to a view of Richmond that the grass was made to look almost yellow, whereas grass was always green. Ruskin said, "Just come to the window and look at our meadow." The meadow was a brilliant blaze of orange, it seemed to be so covered with buttercups that a cow could not get a bite of grass anywhere. On his criticising the reddish rusty brown in a picture of the valley of the Aar, Ruskin ran upstairs to his study and came down with a great big stone that he had brought from the bed of that very river. Holding this close to the picture Ruskin said, "What difference do you see?" The colour was perfectly natural. Showing him Turner's engravings and the original proofs, Ruskin explained how in one case the engraver had dwarfed a cliff. Instead of giving the engraver the trouble to do the work over again, Turner showed him how to put a little white cottage at the bottom, and up went the cliff directly. He took a great many friends to see the pictures, and was always impressed by the tenderness and kindness of Ruskin's manner. Ruskin had the heart of a woman, with a woman's petulance, waywardness, and little bits of tantrums, but also with a woman's charm and affectionateness. "He would take no end of trouble to get an idea into your head if you were a fool." If someone found fault with the curve of a bough in one of Turner's pictures, he would find a bough in his grounds, and prove that the drawing was true to nature. A number of Ruskin's letters to him, most of which have been printed, were read by Dr. Furnivall, who incidentally told the story of Ruskin's separation from his wife. The lady, Effie Gray, was the daughter of a Scotch attorney, who got into financial straits through railway speculations, and Ruskin, by marrying her, had simply found her a home. It was a very difficult position for both of them, and for a long time there had been a good deal of irritation, but the news of the separation came to him (Dr. Furnivall) as a dreadful shock. They all knew how Millais went up to paint Ruskin in Scotland, and how Ruskin told him the facts of the case, and agreed that if he could he would get the marriage dissolved. So Mrs. Ruskin became Lady Millais. To Ruskin it was a release from something that had been a check and a hindrance to him as far as his work was concerned. The difficulty, however, was that it separated him from Millais. With Holman Hunt and the others Millais had begun work with high ideals, but the time came when he said to Hunt, "We have done enough for our reputation; let us make money." Ruskin wrote to him (Dr. Furnivall):—"The woman had better have never been born who kept me away from Millais. . . . I believe I could have kept Millais up to it." Having read some of Ruskin's correspondence with him on theological questions—as to which the lecturer believed Ruskin in later life developed broader views—Dr. Furnivall spoke of the founding of the Working Men's College. He wrote to Ruskin, who said he thought it would be a delightful thing. Ruskin fitted up the room for them, and paid people to come and teach. Taking the drawing class, Ruskin would give the men, say, a sphere, and tell them to draw it and make it look round by means of shading. Then he would go from one to another, gently pointing out the faults and encouraging them to do better. Ruskin started a modelling class in the cellar, and at first it was very popular, the pupils found so much fun in pelting one another with the clay. Ruskin found that the modelling class would not do, and brought the men back to their drawing. He used to get up sketching parties, and stand them a good tea before sending them home. From 1854 to 1858, with some intervals, Ruskin came every evening to the painting college, and all this time he was going on with his own work, in which he got some of the working men to help him. One of them was now a wealthy publisher, and others had become eminent in art and other walks of life.

METROPOLITAN STREET IMPROVEMENTS.

THE following letter from Sir Frederick Bramwell has appeared in the *Times* :—

For many years I have expressed my opinion privately that in any metropolitan improvement involving a considerable length of main thoroughfare, the old construction of the streets of Chester, known as the "Rows," might well be followed.

No doubt most of your readers of middle age have, at some time or another, gone beyond the railway station at Chester, and have penetrated into that city, and they will know perfectly well of the construction to which I refer. But, for the information of those who have not seen this mode of dealing with the streets of a city, I will endeavour to give a verbal description, although I have little hope, judging by experience, of making myself intelligible.

Imagine an ordinary line of street, with shops as usual at the ground floor; imagine next that the front wall of the houses at the level of the first floor has been taken away along the whole length of the street, leaving the upper part of the houses to be supported by columns, and that the party walls between the houses have been suppressed for a width of, say, some 10 feet to 15 feet. If this description has been followed it will be evident that there has thus been left on the tops of the ground floor shops and at the first floor level a continuous under-cover footway, 10 feet or 15 feet wide. The front of this elevated footway is protected by a parapet, and at its back are the fronts of the shops on the first floor level.

I propose that this construction, with one variation, should be repeated for the new street from north to south of London, about to be constructed. The advantages are these :—

1. The ordinary street gives one shop to be let on the ground floor, and, probably, a basement. The proposed street would give, in addition, a shop at the first-floor level.

2. In the ordinary street the foot passengers have no protection from the weather. In the proposed street they could walk in the dry, and free from mud.

3. In the ordinary street, where the foot passengers have to cross side streets, they must do so subject to encountering the traffic, and also where they wish to cross from side to side of the main street they must do so encountering the traffic. By the proposed method of construction there would be foot-bridges at the first-floor level, by which all side streets would be crossed, and at intervals there would be foot-bridges across the main street; also, at intervals, there would be stairs, giving access from the ground level to the first floor level, so that persons on the ground-level foot pavement would be able to cross from side to side without having to encounter the traffic.

4. I do not pretend to be a person of taste, but I do know that such a construction as I advocate would lend itself to most picturesque and varied architecture, and would also give admirable light and air.

The variation from the construction of the "Rows" at Chester to which I have alluded would be the following :—

I would not carry up the front wall of the floors above the first floor in the same plane as the wall of the ground-floor, but would set it back, probably equal to about half the width of the footway, thereby giving more light to the first-floor shops, while still affording ample cover in wet weather.

May I be allowed to give a few illustrative dimensions?

Ground-floor level, 60-foot (or 80-foot) roadway, 10-foot footpath, making 80 feet (or 100 feet) between the ground-floor shops.

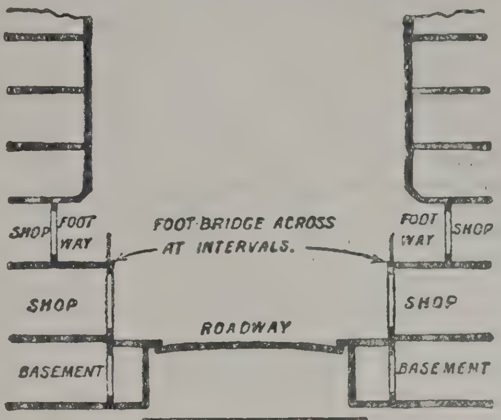
First-floor footpaths 15 feet wide, making 110 feet (or 130 feet) width between the first-floor shops.

Front walls of the second and upper floors set back, say, 7 feet, giving 94 feet (or 114 feet) between walls of the upper s.

The first-floor shops would, I believe, command a very high rental. When sitting as arbitrator in claims for compensation I have had it indisputably proved before me that shops bounding a paved footway thoroughfare did a far better business than those which abut upon a street.

I know the difficulty I have in making myself clear by mere language, and I therefore venture to enclose the most primitive sketch of that which I have been endeavouring to express.

SECTION OF PROPOSED ROADWAY.



The *Times* in a leading article on the letter says there can be no question that the proposal is very captivating; but it is nevertheless manifest that its details would require much and serious consideration before even the works committee of the County Council could be expected to undertake buildings of the described character. In the first place, as Sir Frederick tells us, the idea is derived from the "Rows" of the ancient city of Chester; and it is remarkable that in Chester itself, where such a method of construction is known to the inhabitants by long experience of its merits or defects, it has not, so far as we are aware, been copied by modern architects. Among the advantages enumerated not the least is that the proposed upper footways would be "free from mud," and the same description is intended to apply, presumably, to the stairs giving access to them. By whom would they be kept so? For an answer to this question we must turn to the new municipalities, and we should be entirely dependent upon the view which the one concerned might chance to take of its duties. Some years ago the law made every householder responsible for the cleanliness of the footway in front of his dwelling. This law was a source of great extravagance and of some hardship, because cleaning footways is not work suitable for female servants, or even for male servants of the better class, and it was generally done, if at all, by gangs of men who went from house to house, and who insisted, as a rule, upon being very much overpaid for their unskilled labour. After snowfall, especially, they levied a serious and wholly unjustifiable tax upon the inhabitants of many streets. The law was changed, and the duty of cleaning the footways was transferred to the proper persons—the local authorities—and they, as a rule, have been content to leave it undone. The result is that in many residential parts of London the existing footways are never cleaned at all, and that within a few yards of every crossing they are often thickly covered with slippery mud, not unblended with still more objectionable material. The proposed upper footways would, of course, be less liable to have mud conveyed to them than the lower ones; but they would not entirely escape, and the stairs, unless regularly and carefully attended to, would soon become covered with filth. To keep these stairs and footways clean would be an intolerable tax upon the tenants of the upper shops, and, if enforced, would greatly diminish their rental value; while it could hardly be imposed upon any other residents in the buildings, and, unless carried out by the municipality, would be altogether neglected, with obvious results. The disposal of refuse, ashes, &c., from the several floors is also a matter that would require architectural and municipal consideration, so that, although we fully admit the attractive nature of Sir Frederick's proposal, we do not feel entirely satisfied either of its advantages or of its practicability. We shall nevertheless be entirely satisfied if both the one and the other should be found to admit of satisfactory and practical demonstration.

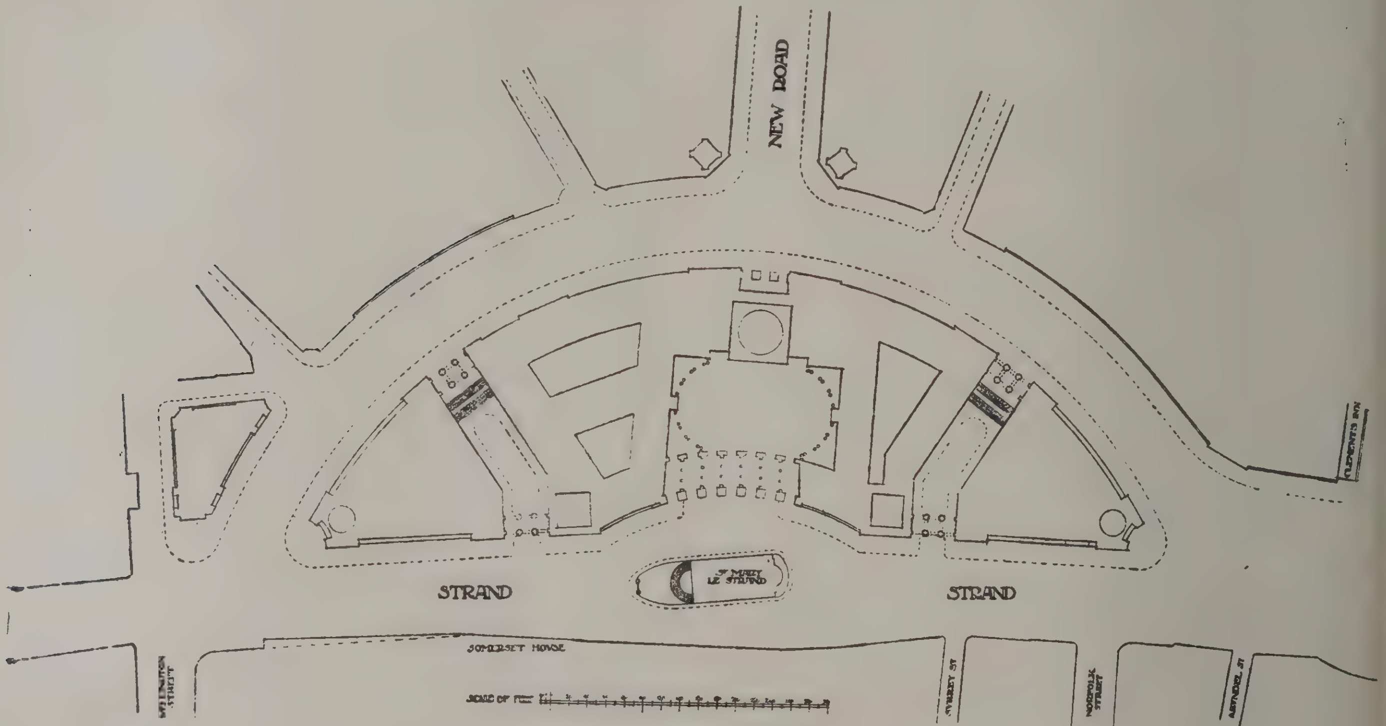
Lord Barnard, assisted by the Bishop of Durham, performed, on the 5th inst., the opening ceremony of the new science buildings which have been erected in connection with Barnard Castle county school.

NOTES AND COMMENTS.

M. Jules Breton is one of the most admired of French landscapists. As he has lived in this world of ours for seventy-three years, he serves as a chronicle of the revolutionaries in painting, with whom he was sometimes a rival but always a friend. With the exception of Manet and other early Impressionists, he is kindly disposed towards all the men who risked their reputation in order to be able to formulate decisively some creed in art. To one of the beliefs of the early romantic school he is still steadfast, viz. that French landscape recovered itself in its days of decadence through the healthy influence of the English school. The English and the painters who formed the Barbizon school revealed secrets which were unknown to painters of a past age. They were taught to combine human passions with the passions of the elements; a communion between men and things was established. To the members of the new school the air was no longer a simple physical compound, but when represented by some pencils it became an atmosphere of sentiment and thought "that gave delight and hurt not." The mystery of earth became more profound, and the artist felt he was exalted when he was allowed to represent what was around him. But long before the influence of the English was exercised, M. Jules Breton believes there was a precursor in the person of Poussin, who endeavoured to suggest that the earth was filled with wonders which were only visible to the eyes of the initiated. It is not, of course, to be expected that the Frenchman of to-day will accept the conclusion of M. Jules Breton. There are too many prejudices to be overcome before that end can be attained. M. Jules Breton, very probably, is glad to do anything which will keep down the sense of self-importance which prevails in France, and especially among the rising generation of artists, and for that purpose what can be more efficient than the acknowledgment of what is owing to Constable, Bonington and many other English artists?

The Greeks, like other races of antiquity, were supposed to be exclusive; indeed, it is among the Hebrews alone we find such visions of crowds making their way by various routes to Jerusalem, as Isaiah described them. But art, and especially architecture, has had the effect of making the ruined Athens become a centre of the universe, a distinction which was denied to it in the days of its glory. It is not generally known how many countries have their schools or institutions in Athens, in the hope and expectation that a little of the Attic spirit may pervade the students, and which they will carry back to their countrymen. The institutions may be called schools, academies or archæological societies, but they all have a common aim. The French, the Germans, the Austrians, the English and the Americans have representative bodies in Athens, and there is a contest among them for the foremost place in seeking after the treasures of a past age. The latest aspirants for a share in the intellectual struggle are the Russians. They have longed to possess power in Greece, but it is only lately they made an appeal for a local habitation from whence they could carry on explorations and follow out archæological researches. The appeal did not remain long unanswered. An old cloister in Athens has been presented by the Greek Government, and in a short time we may expect to hear of discoveries which will be equal to those made by other races.

It is satisfactory to know that the Grand Palais of the Champs-Elysées will be available in April 1901 for the reception of the works of art which will form next year's salons. The division of the building between the Society of French Artists and the National Society of Fine Arts has yet to be determined. Both consider they have a right to the most attractive rooms. MM. Jean-Paul Laurens and Dawant have already had interviews with the Minister of Public Instruction on the subject, and the representatives of the rival society must have been no less zealous. The decision has yet to be announced.



ILLUSTRATIONS.

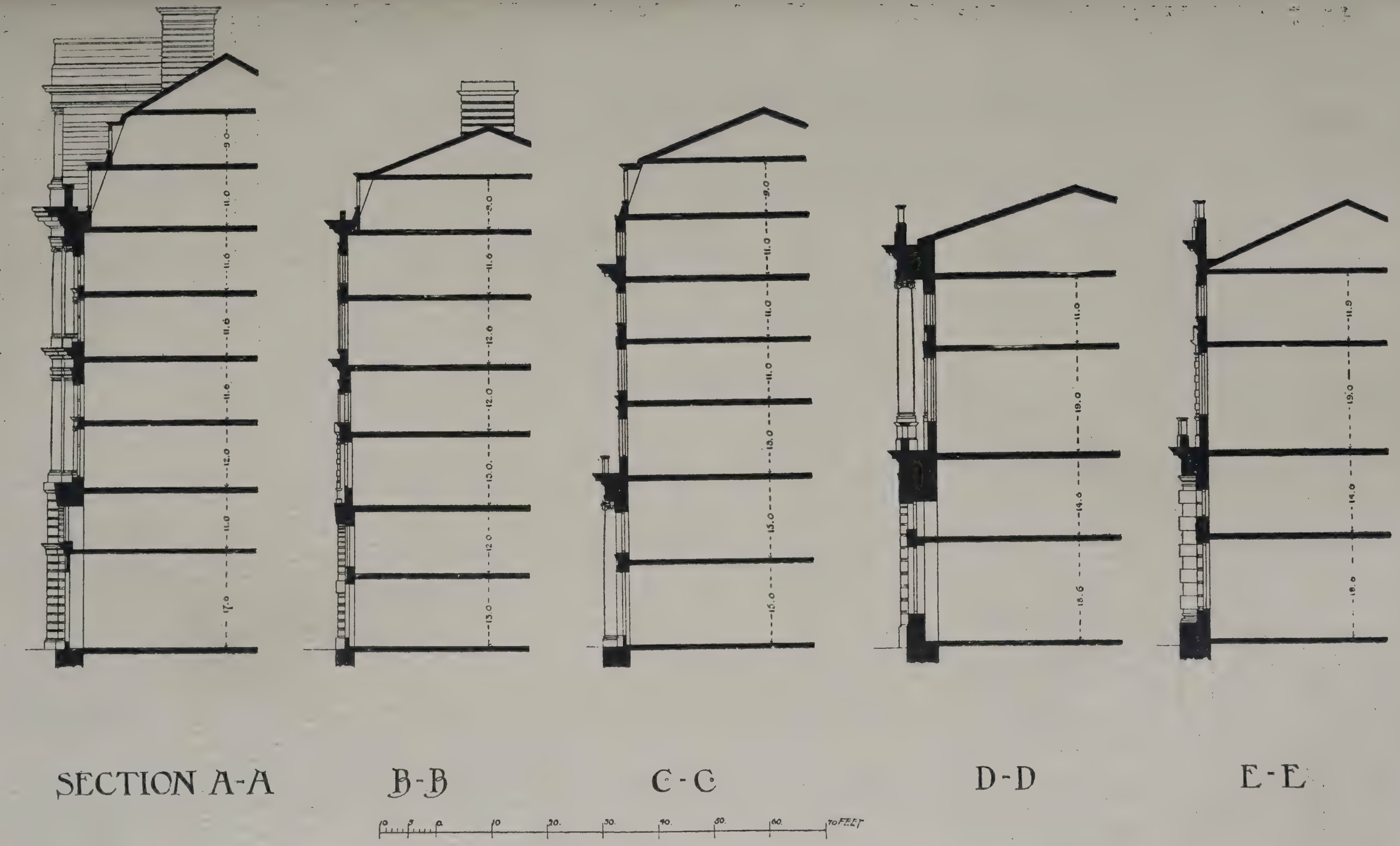
THE LONDON COUNTY COUNCIL HOLBORN AND STRAND IMPROVEMENT.—DESIGN NO. 19.

ROYAL LONDON BUILDINGS, WOLVERHAMPTON.

Our illustrations this week include the block of buildings about to be erected near the centre of Wolverhampton on an isolated site at the junction of Lichfield Street and Wulfruna Street, and facing the approaches to the London and North-Western and Great Western Railways. The architects, Messrs. Essex, Nicol & Goodman, of Birmingham, were selected in a limited competition amongst local architects.

The buildings contain, in addition to the shops, warehouses, basements and sub-basement, a public hall attached to hotel premises, with club and Masonic rooms over. Suitable premises for the National Telephone Company are also arranged over the buildings facing Wulfruna Street.

The main approach to the building is by a fireproof staircase in the centre of the circular frontage at the junction of the two streets; the principal floors will be constructed of fire-resisting materials, and externally the elevations will be faced with Horsley Castle stone.



THE LONDON COUNTY COUNCIL HOLBORN AND STRAND IMPROVEMENT—DESIGN NO. 19.

THE ARCHITECTURAL ASSOCIATION.

A MEETING of the Association was held on Friday evening last at 9 Conduit Street, Mr. W. H. Seth-Smith, president, in the chair.

The following were elected members:—Messrs. P. J. Bartlett, R. M. E. Carey, C. M. Childs, W. L. Clarke, H. A. Coldman, P. M. B. Collcutt, F. J. Cox, R. T. Congreve, W. S. Dakers, J. W. H. Farrow, S. T. Hennell, R. M. F. Huddart, W. C. Lemaitre, A. C. MacGeorge, R. H. Nicol, C. E. Power, E. T. L. Smith and F. Worrow.

A vote of condolence was passed to the family of the late Mr. William Young.

Mr. L. L. MACASSEY, jun., read the following paper, written by him from notes and the experience of his father, who was too ill to attend the meeting, as he had hoped to do when invited earlier in the year:—

The Legal Position of the Architect.

There are few professions for which more varied qualifications are required than that before some of whose leading members I have the privilege of reading this paper, for the capacities in which an architect requires to act are numerous and carry responsibility. At times he is called on not only to advise his client on matters of architectural moment, but often compelled to be a quasi-legal adviser and constantly obliged to assume the rôle of arbitrator between his employer and those engaged in carrying out his designs. In each capacity the law invests his actions with different legal consequences with which every architect should be acquainted. Members of the profession are presumed, in the eyes of the law, to be thoroughly versed in all matters requisite for properly advising their clients. "The public profession of an art," said Mr. Justice Willes, in Harmer *v.* Cornelius, 28 L.J.C.P. 85, "is a representation and undertaking to all the world that the professor possesses the requisite ability and skill." Indeed, the great principle of English law applicable to all such professions is that the architect must display reasonable skill and care, and if his employer suffer damage by reason of his failure so to do, for it the architect will be held responsible. In determining the precise liability of architects for their actions under certain circumstances, the real difficulty is to properly apply this principle. There are in reality but few decisions bearing directly on the liability of architects, for the honour of the profession has been singularly well maintained. But such as there are I shall mention, and in addition point out the legal relations that exist at different times during the execution of a contract between the architect on the one hand, and the employer and the contractor on the other. The knowledge thereof is essential to every architect. It is, indeed, a part of the reasonable care and skill he is obliged to possess. Without it he cannot fail to put himself and his employer in many injurious positions.

Now the employment of an architect may be divided under two main heads: his employment as a skilled adviser to his client, and his employment during the execution of works as an agent of the client. Both branches of service come under the function of contract.

As a skilled adviser the architect may be employed to give evidence, to make valuations of property, to act as arbitrator, and to prepare designs for intended buildings, and the latter is most frequently the form his employment takes. When, however, the buildings come to be erected, a contractor is generally called in, and as between the building owner and the contractor the architect acts as agent.

In dealing with the duties of the architect, reference must first be made to the retainer, for often the validity of his agency depends on his being properly retained. In most transactions between employer and architect a valid contract can generally be implied from the course of business letters between the parties, and if no terms are arranged the architect will be entitled to reasonable remuneration. It is always best, however, to have the conditions of service and the terms of payment settled before the work begins and so avoid misunderstandings. A short letter from the architect reciting the terms will do, for even though not acknowledged, the employer is legally bound if he acquiesces and allows the work to go on.

When, however, the employment will last for a year, the agreement should be in writing and signed by the employer (21 Car. II. c. 3, s. 4), the provision made by the Statute of Frauds. But the mere fact that the employment has extended beyond a year will not of itself bring the case within the statute. In fact, to make the Act apply, it must appear from the terms and subject matter of the agreement that the employment will not be completed within the year (Peter *v.* Compton, Skin. 353), and it should also be noted that an agent of the employer, if duly authorised, may sign for him.

In cases where an architect is employed by a corporation, his retainer must be of a more formal character than when a private individual is the employer. As a general rule contracts with corporations are only binding when under seal. Thus it has been held that a medical officer employed by a Board of Guardians must be appointed under seal (Dyte *v.* St. Pancras Board of Guardians, 27 L.T. 342).

But a contract not under seal may be binding upon a corporation in certain cases, that is, if it is with respect to matters necessary or incidental to the functions or business which the corporation has been created to carry on. What these matters are it is somewhat difficult at times to decide. In Nicholson *v.* Bradfield Guardians (L.R. 1 Q.B. 620) it was held that a dealer who supplied coal to the workhouse under an agreement not under seal was entitled to recover the price. Probably thus an architect retained to do repairs would not require to be retained under seal by a corporation, but if to construct new buildings and works he would.

As regards contracts with local and sanitary authorities, reference must be made to Section 174 of the Public Health Act, 1875, which enacts as follows (38 & 39 Vic c. 55, s. 174, s.s. 1):—"Every contract made with an urban authority whereof the value or amount exceeds 50*l.* shall be in writing and sealed with the common seal of such authority." The decision in Hunt *v.* Wimbledon Local Board turned on this point (3 C.P.D. 208, 4 C.P.D. 48). The plaintiff had been employed by the Board's surveyor under their express authority to prepare plans for new offices for the Board. When the tenders came in, however, it was found the lowest considerably exceeded the estimate. The scheme fell through, and on the plaintiff suing for his fees for the preparation of his plans the jury found that the offices were necessary for the purposes of the Board, and that the plans were necessary for the erection of their offices. But it was held by the Court that sub-section 1 of Section 174 of the Public Health Act, 1875, was mandatory, and as the amount was over 50*l.* and the contract not under seal the plaintiff could not recover.

But in Younge & Co. *v.* Mayor, &c., of Royal Leamington Spa (8 App. Cas. 517), the defendants' engineer, with their approval and consent, called in the plaintiffs under the specification to finish up a contract abandoned by a former contractor. The work was completed and the defendant Board got the benefit of it, but the plaintiffs failed to recover as there was no contract under seal.

But Section 174 does not apply unless it is apparent at the outset that the amount of the work or the value of the services rendered will exceed 50*l.* Thus, in Eaton *v.* Basker (7 Q.B.D. 529) a medical man agreed verbally with a sanitary authority to attend fever patients in tents at 5*s.* 3*d.* per tent per day. His bill ran up to 100*l.* It was held that he was entitled to recover, as the contract was not one exceeding 50*l.* and requiring a sealed agreement within the meaning of the Act, as at the time it was entered into the parties had not ascertained it would exceed that amount.

What, then, do these cases show us? Firstly, this, that an architect, to be a properly authorised agent, should not accept a retainer to prepare plans for a corporation or local authority unless under their common seal, if in the latter case his percentage or fees exceed 50*l.* He may find it impossible to sue for his fees, and in the carrying out of the works he may, as the agent of the corporation or local authority, have perfectly bonâ fide made arrangements with builders and contractors which, however, his employers are in a position to repudiate, placing him in the undeserved position of having, in the eyes of the law, acted as an agent without authority, and rendering himself liable to the builders or contractors.

Even at common law, apart from the Public Health Act, the corporations or local authorities might disclaim all contracts, however small, he had made on their behalf, and an agent, though honestly acting in a believed authority, is liable under the rule in Collen *v.* Wright (8 E. & B. 647) and Firbanks Exors. *v.* Humphreys (18 Q B D. (C.A.) 62), which renders him personally liable. An architect may, however, if retained to advise at day fees, recover his fees against a local authority under Eaton *v.* Basker, although they do exceed 50*l.*

The architect to a local authority, if he be a permanent official, may, however, be lawfully appointed under Section 189 of the Public Health Act by resolution entered on the minutes, as in Smith *v.* Hirst (23 L.T. 665), and in such a way appointed may act as the local authority's agent without fear of consequences.

So an architect may be validly appointed or merely temporarily retained by School Boards acting under the Elementary Education Act 1870, Section 35, and Rule 7, Schedule III., by a minute of the Board, countersigned by the chairman and by the clerk (Scott *v.* Great and Little Clifton School Board (14 Q.B.D. 500).

It will be remembered that at the outset I pointed out that the architect who holds himself out for and accepts employment must possess and bring to bear upon the discharge of his duties a reasonable amount of skill and care. But the obligation does not apply alone to architects Solicitors, doctors, dentists and many other persons engaged in professional and technical matters are subject to the same liability. The question then arises, What is a reasonable amount of skill which must be possessed by an architect? and the answer to this not very satisfactory. No general rule can be laid down. The circumstances of each case must be taken into consideration. It is not enough to act to the best of one's skill and ability, one must act in a skilful manner (Jones *v.* Bird, 5 B. and A. 845). What would be a skilful manner under the particular circumstances seems to involve much greater knowledge and ability to-day than it did fifty years ago. The law considers the advance of science and human requirements. But before going into details, let me mention one exception. If an employer accepts the services of an architect to carry out certain work, and knows that the architect has had but limited experience and training, he does so at his own risk. And if by reason of the inexperience of the architect damage occurs, the employer cannot, in the absence of negligence, hold the architect liable therefor. When, however, the fact of an architect's incompetence for the work becomes known to his employers, they are justified in dispensing with his services before the expiration of his engagement (Harmer *v.* Cornelius, 28 L.J.C.P. 85).

As the first illustration of absence of reasonable care and skill, one may deal with the introduction into a design of some novel invention, the success of which has never been tried, or the undertaking, in the first instance, of work of a very doubtful result. In the case of the doctor or solicitor there is no implied warranty as to results. The doctor may do his best and the patient may die, the solicitor may take every needful step and yet lose his case. But these contingencies do not come to the aid of the architect; he is bound to avoid experiment at the expense of his clients, and unless he sees his way to a successful result the work should not go on. In Duncan *v.* Blundell, 3 Stark 6, 5 M. & P. 548, Mr. Justice Bayley said:—"A professional man should not undertake work when he does not know whether he can succeed or not." The law, however, is very indefinite as to what length an architect may go in doubtful work. Direct authorities are wanting, but reasoning from analogous decisions discloses the principle that to be free from liability he should acquaint his employer fully with the hazardous nature of the work and obtain his consent thereto, and satisfy himself, after investigation, that with the adoption of proper methods the work may be carried out successfully. In an old case of Slater *v.* Baker & Stapleton, 2 Wilson, 359, where surgeons had used a new instrument for operating with disastrous results, the Court said "this was the first experiment made with this new instrument, and if it was it was a rash action," and allowed the action. But in case of an action against an architect in respect of unsuccessful work, it would appear from Chapman *v.* Walton (10 Bing. 63) that the fact that he took the steps that all architects in his position would have taken will be a good defence. A clear distinction should be drawn between mistakes in policy on the part of the employer and incompetent procedure on the part of the architect A wooden building like a Norwegian hotel is much cheaper than a stone erection; if the architect builds it of wood according to instructions and of proper dimensions he is not answerable if it does not stand the weather.

As sometimes happens, the employer is dissatisfied after the completion of the work with the result of the design, and tries to throw responsibility on the architect. What is the position of the architect? With respect to all matters of policy on which the client is competent to form an opinion—as, for example, the arrangement of particular rooms in a house, and of which he has approved—he is estopped from turning round afterwards upon the architect and charging him with want of skill. But the employer is not deemed to be competent to determine minute matters of detail, such, for instance, whether or not particular members are of proper scantling. Should girders break or walls crack from causes that the architect ought to have foreseen, the latter will be liable for want of reasonable skill

The position of the architect in respect of plans prepared by him is of special importance, and how he is affected by any errors or insufficiencies either in them or the specification. The case of Thorn *v.* The Lord Mayor of London (1 App. Cas. 120) may be regarded as the leading authority. There the facts were these:—The plaintiff had contracted with the Corporation of London to build a bridge across the Thames according to the plans of the City Engineer. Certain caissons for the pier foundation were included in the work, and these the contractor found he could not construct according to the plans and specification. Another method with the consent of the engineer had to be adopted and the contractor sued for the extra expenditure he had incurred It was held, however, that he could not succeed, as there was no warranty on the part of the defendants that the works as proposed were capable of being carried into execution. The usual clauses were in the specification. It will thus be seen that under ordinary plans and specifications, architects as against contractors cannot be made liable for their insufficiency. So that if a contractor undertakes to do a thing that is impossible at the outset, he may refuse to carry out the contract on the ground of impossibility of performance according to the decided cases, yet where he has once entered on and completed the work, he cannot claim in respect of any extra expense occasioned by the work being impossible or impracticable.

The liability of the architect towards his employer for defective drawings is, of course, different, and we must distinguish defective drawings by reason of the work being infeasible, and defective drawings prepared in a careless manner. An architect, in the absence of special agreement, is bound to make sufficient preliminary investigation to satisfy himself that his proposals are practicable. Thus in the case of Moneypenny *v.* Hartland (2 C. and P. 378), the plaintiff had been employed to prepare an estimate and other particulars for a committee proposing to erect a bridge. He relied on the borings that had been taken by a surveyor previously employed by the committee, which turned out incorrect The estimates were exceeded in consequence, and the plaintiff when he sued for his fees, failed to recover. It is rather difficult to say whether the committee would have succeeded in an action against the architect. Could they have shown appreciable damage I am inclined to think they could for his neglect of ordinary skill and care.

In respect of defects in the drawings arising out of careless preparation, it would probably only be when the employer had been put to extra expense thereby that he would take proceedings against an architect. This, as we have seen, is not likely to happen. But if it should, the architect is undoubtedly liable for want of skill and care.

As against the public few cases have occurred in which architects have been held liable for failure of their designs. A case is Mosdell *v.* Mitchell and Others (*Times*, January 20, 1891), in which the widow of a workman brought an action under Lord Campbell's Act against a building owner, his contractor and architect, for the loss of her husband, who was killed by the walls of a house falling upon him which were too light to bear the strain. The house had been designed by the defendant architect for the defendant builder. During the hearing the jury, on the suggestion of the judge, stopped the case against the building owner, and gave a verdict for 500*l.* against the builder and architect jointly.

As illustrative of the care that the law exacts from an architect in his capacity of skilful adviser, one may mention the case of Crabb and Others *v.* Brinsley (5 T.L.R. 14), in which the defendant had been retained to advise on the character and condition of certain houses in Holborn proposed as security for a mortgage. The defendant reported that the houses were good security. The plaintiffs made an advance of 1,500*l.*, but the premises were afterwards sold for 410*l.* There were two actions, and in the second action the plaintiffs recovered the full amount of their advance, viz. 1,500*l.*, as against the defendants.

There are many other cases of like character, and which might be referred to, but they disclose nothing new in the legal position of the architect as a skilful adviser of his employer. The facts vary in each case, but the law appears well settled that the architect must bring to the discharge of his duty a reasonable amount of skill and care.

We may now assume that the architect has completed his drawings and specifications for some intended work, and that the building owner has approved of the documents, and is desirous of obtaining tenders. The architect, as a rule, is called upon to investigate the character of the different tenders submitted, and his duty is to advise impartially In a case of Miller *v.* Wilson, reported in the *Building News* of August 6, 1886, the plaintiff, a building owner, sued an architect for advising him to accept a particular tender under which alterations to his house were carried out, and which was the highest of those sent in. After a great deal of conflicting evidence on both sides eventually the jury found for the defendant architect. Plainly, an architect's duty is to advise which of the firms who have tendered are most likely to do the work the cheapest, but in the most satisfactory manner, and bring it to a satisfactory conclusion.

With the acceptance of a tender by the employer, and the entering into of a contract, the architect enters upon a wider sphere of duty in acting as his employer's agent. His duty, then, is to faithfully carry out the work according to the plans and specifications, and to exercise a competent supervision to insure satisfactory workmanship and materials being obtained.

An architect during the construction of the works has not authority to deviate from plans or specification in the slightest without his employers' consent. When no express authority is given, an architect can only bind his employers in respect of acts done or orders given in the general course of his employment, and these are confined to such as are absolutely necessary for carrying out the work. The authority of the architect is really but of very limited extent. In the words of Chief Justice Baron Alexander in Rex *v.* Peto, 1 Y. and J. 37, he is a "person who ought to be in general but an onlooker of the owner to see that the work is accurately performed." Cooper *v.* Langdon (9 M.W. 60), is an instructive case. There, according to the drawings and specifications, a certain wall was to be of brick, for which stone was substituted by the builder. The building owner took action for breach of contract and succeeded. The defendant claimed that he made the alteration at the instigation of the architect, but there was no authority shown on the part of the architect to bind his employer in respect of any deviations from the drawings.

The authority to make alterations or additions is usually conferred by the building contract, when it is conferred at all, and the architect must keep strictly within its terms. Thus in Rex *v.* Peto (quoted above) the architect had the power to order "additions or omissions." The work consisted in building a custom house with piled foundations. The architect had the house built without piled foundations, and it was held that this was not an omission, but in reality a variation which was not in the power of the architect to order.

A matter of great importance is the question of quantities, and on this a few observations may be offered. It is extremely doubtful whether an architect is allowed to retain a quantity surveyor without express authority from his employer. Much depends on the terms of the architect's retainer. Thus in Waghorne *v.* Wimbledon Local Board (*Times*, June 4, 1877) the defendant Board instructed their surveyor to prepare plans and specifications and procure tenders for the erection of a mortuary chapel. The surveyor instructed the plaintiff to take out the quantities. He did so, and sent in his bill in the ordinary way. The Board refused to pay, but the Court held that as the Board had instructed their surveyor to procure tenders, and as tenders could not have been submitted without bills of quantities, there was implied authority to the surveyor to retain a quantity surveyor.

Where, however, the architect is not directed to procure tenders it is exceedingly questionable whether, apart from a distinct custom in the profession, an architect on his own initiation should retain a quantity surveyor; in fact, it is so doubtful that it is much better not to do so (Moon *v.* Guardians of Witney Union, 3 Bing. N.C. 114, cf. Evans *v.* Carte, *Times*, May 28, 1882). For should the architect retain a quantity surveyor without authority, he will be personally liable for that gentleman's reasonable charges, and it matters not that he retained him in perfect good faith and convinced of his authority to do so (Collen *v.* Wright, 8 E. and B. 647). In a case, Gordon *v.* Blackburne (the *Builder*, February 1, 1879), the defendant, an architect, had requested the plaintiff to take out quantities for a building he had been instructed to prepare plans for. The quantity surveyor did so, and applied to the architect for payment, by whom he was referred to his employers. He then proceeded against the architect and recovered his fees.

The architect should not prepare the quantities himself. It is objectionable for many reasons, as the quantities are often paid for by the builder. The general law prohibits an agent from making any profit out of his agency apart from his own proper remuneration by his employers. And it is only a custom to the effect stated that would enable an architect to receive any money from the builder in respect of quantities.

In the case of inaccuracies in bills of quantities, what are the liabilities of quantity surveyor and architect? The quantity surveyor is appointed by the owner. To the owner, then, and to him alone, is the quantity surveyor responsible at all. There is no privity between the quantity surveyor and the contractor, and therefore no liability to the contractor, apart from fraudulent misrepresentation, although, as was held in North *v.* Bassett (1 Q.B. 333), there may be a reasonable and good custom that the builder should pay the quantity surveyor's charges.

Whether the architect or a quantity surveyor takes out the quantities, it is to their employer that they will be liable, and to him only, for negligence and want of care. But as the judge remarked in Priestley *v.* Stone (4 *Times* L.R. 730), quantity surveyors are not liable apart from negligence. What they do is to submit their quantities as the result of their calculations, and to the best of their belief correct. There is the obligation on the builder taking those quantities to satisfy himself of their accuracy.

The two principles of law governing the liability of architects, viz. the application of reasonable skill and care, and their keeping within the limits of their authority as agents, must now be applied more immediately to their conduct during the execution of works.

At such a time an architect's duty is to exercise a proper supervision, so that the employer gets as good a building as he bargained for. In Ellisen *v.* Lawrie (*Times*, February 19, 1878), owing to the improper attention given by an architect to the laying and jointing of sewer pipes in connection with a dwelling-house, foul gases penetrated into the residence, causing illness in the family. The plaintiff, the owner, sued the architect for the cost of repairs and for medical expenses, and succeeded in his action. Of course, the question of what constitutes proper supervision must be left to the discretion of the architect who knows the character of the work, and more especially the character of the contractor engaged upon its execution.

The liability of the architect in respect of alterations and omissions has already been dealt with. It should be mentioned that he has no authority of himself to call in a quantity surveyor, as is often done, to measure up deviations and extras. That was the course adopted in Plimsaul *v.* Lord Kilmorey (1 T.L.R. 48) by the architect in respect of building operations at St. James's Theatre. It was held that he had no right to do so, and that even if there was a custom for the architect to employ a quantity surveyor it could not reasonably apply to the measuring up of extras.

Dealing with the question of extras—a most trying one often to architects—most specifications provide that extra work shall only be executed on being ordered in writing by the employer or the architect. No definition exists of what constitutes extras, though many have been suggested, and the builder may refuse to carry out certain items of work, claiming them as extras, unless on written authority, items which the architect may consider within the contract. But an order in writing may be given under protest and will not be construed as against the architect or the employer as admitting the contractor's contention. The position of the architect as against the contractor is this:—If the specification provides for a written order, a written order there must be before the contractor can claim payment (Thames Iron Works Company *v.* Royal Mail Steam Packet Company (13 C.B. [n.s.] 358), and if a contractor executes work with this provision without a written order, he has, if there has been no waiver of the condition, no redress against any one. But supposing the specification is silent, then the architect cannot without express authority from his employer order extra work. If he does so and holds himself out as possessing, or acts without that necessary authority, he renders himself personally liable to the contractor in respect of the extra work so ordered (Collen *v.* Wright).

Passing on to the architect's duty in respect of measuring up, that involves the same application of reasonable care and skill. The accuracy of the work must be considered in respect to the magnitude of the job, and is altogether a question of degree. Thus in Corbett *v.* Richmond & Chandler, reported in the *Building News*, May 18, 1888, the plaintiff was an architect, and sued the defendants (his employers) for balance of his commission in respect of the erection of certain premises in Manchester. The defendants resisted on the ground of the architect's negligence in measuring up work, with the result that the contractors were paid 537*l.* more than they were entitled to. The official referee to whom the judge referred the case said 537*l.* on 10,000*l.*, the value of the premises, amounted to only $\frac{3}{4}$ per cent., and with only such a difference between the defendant's and the plaintiff's figures on such a job, it was absolute nonsense to charge an architect with negligence. He had never known a case in which negligence was charged against a professional man on such insufficient grounds. Towards the contractor the architect is not liable at all in respect of measuring up except on the ground of fraud.

Much the same state of things exists in regard to certificates. To the employer the architect is responsible for negligence in granting certificates, whether it be a progress or a final certificate; and the fact that by the terms of a building contract a final certificate is to bind both builder and employer, does not bind architect and employer. Thus, in Rogers *v.* James (8 T.L R. 67) the plaintiff was an architect who sought to recover a balance of fees in connection with the supervision of some houses. The defendant (his employer) counterclaimed for negligence, in that the architect had not insisted on the builder putting in certain concrete in foundations. The architect pleaded that he had deducted the value thereof from the balance of the contract money payable to the contractor under his final certificate, and that it, under the usual clause in the specification, was binding on both employer and builder. The jury found that the plaintiff had been negligent. The judge held, and his view was maintained by the Court of Appeal, that the clause binding employer and builder did not apply as between architect and employer.

When the issue of the architect's certificate is a condition precedent to the payment of the contractor, an architect is often perplexed to know how he stands if, from reasons of dissatisfaction with the work, he is unable honestly to grant the certificate. Is he liable to an action at the hands of the contractor? It must be remembered in connection with this that the architect is in no way the servant of the contractor, and owes him no duty different from that which he owes to all mankind. The case of Le Lievre *v.* Gould (1 Q B. 491), was a case of action against an architect for negligence in discharging his duty. The plaintiff was a third party who had not retained or paid the architect, and, moreover, the negligence was practically admitted. But the action failed. Lord Esher's judgment contained the following sentences:—"What duty is there when there is no relation between the parties by contract? In the absence of contract an action for negligence cannot be maintained when there is no fraud." And in Stevenson *v.* Watson (4 C.P.D. 148) the plaintiffs, certain builders, took action against the defendant architect in respect of his certificate being insufficient, alleging that he did not exercise care and skill in ascertaining the amount due to them, but not alleging fraud. It was held that the defendant in granting certificates was not liable for want of care or skill. He was only bound to give an honest decision.

So that, therefore, an architect generally is only liable to a contractor in point of fraud, whether in respect of refusal to grant certificates or delay in granting them, or approval or condemnation of materials or workmanship and other such matters. Lord Herschell very clearly and explicitly explains in Peek *v.* Derry (14 App. Cas. 374) what is fraud. "Fraud," he says, "is proved when it is shown that a false representation has been made (1) knowingly, or (2) without belief in its truth, or (3) recklessly, careless whether it be true or false."

If, therefore, an architect believes in the justice of his cause, let him refuse a certificate fearless of consequence, but on grounds, however, that he can stand over should the contractor proceed for a mandatory injunction to restrain the employer from keeping him out of his money.

There is an interesting case, that of Ludbrooke *v.* Barrett (46 L.J. C.P. 798), to illustrate what was held to amount to fraud on the part of the architect in refusing a certificate. The plaintiffs, being builders, had agreed to build certain buildings for one Ridgway on the condition that they should be paid on the defendant's certificate when the buildings were erected to his satisfaction. It was found that the architect had an interest in the matter, and that he had colluded fraudulently with the building owner in refusing the certificate, and the action was allowed.

The architect has often, as was mentioned, to occupy the somewhat inconvenient position of arbitrator between the contractor and the employer. Acting as such, he is in the position of a quasi-judge, and as such is not liable to either the employer or the contractor for negligence or want of skill in making his award. He is, of course, personally liable for fraud, and that to all parties injured by his wrongful acts. In the Tharsis Sulphur Company *v.* Loftus (L.R. 8, C.P. 1) the defendant, an average adjuster, was retained by the plaintiffs to settle and adjust the proportion which the ship and cargo respectively were to bear of losses incurred during the voyage. When he had made his award the plaintiffs, in spite of their undertaking to abide by his decision, brought an action against him alleging negligence in making his award. It was held, however, that the action would not lie, and see also Pappa *v.* Rose (L.R. 7, C.P. 32 and 525).

Architects in their professional career are frequently and inevitably made the recipients of confidential information respecting the affairs of their clients, and not infrequently at some other stage of their career find themselves in the position of opponents to their former employers. It is not easy to decide what is confidential information; but, be it what it may, the decision in Robb *v.* Green (A.C. 315) and the words of Lord Justice Smith are imperative:—"It is a necessary implication which must be grafted on a contract of service that he servant undertakes to serve his master with good faith and fidelity, and it is a breach of this condition to use during or after the period of service confidential information acquired during it adversely to the employer or for the servant's own benefit." Plans belonging to a late employer, for instance, would be confidential, and if submitted to a new employer the Courts would issue an injunction against any architect so acting, and would compensate his late employer by damages for any injury incurred thereby. But where there is nothing confidential in the information, where it is merely a compilation of facts in every one's power to make, if possessed of he requisite ability, there is nothing to prevent an architect using that for the benefit of himself or of his new clients.

It was mentioned at the outset that the law deems an architect to be acquainted with its general principles to insure an observance of his advice by his client being free from injurious consequences. The precise extent of this knowledge is not clear. From Jenkins *v.* Betham (15 C.B. 188) we may gain ome information. The defendants were engaged by the plaintiff, on his appointment to a living, to value dilapidations. They valued the dilapidations at too low a figure, because of heir ignorance of the legal difference between outgoing and ncoming incumbents, which they admitted. The judge at the rial directed the jury that the defendants could not be held unskilful for not knowing the law as a lawyer did, but that they hould be liable if they did not display such a knowledge of it as was ordinarily current. On a motion for a new trial the Court held that the defendants should have known the broad distinction existing between outgoing and incoming incumbents. So it seems that an architect may be required to know the broad principles of law applicable to matters within his everyday business, such as ancient lights and the right to ertical and lateral support, and that for damage arising to his employer through his ignorance of such questions he will be eld responsible.

In conclusion, it may be observed that many of the difficulties experienced and responsibilities undertaken by architects are such as with properly drawn specifications and carefully prepared plans should not arise. The specification is too often looked upon as a mere enumeration of dimensions and catalogue of materials rather than the basis upon which all the obligations of the contractor may be codified. Every specification should contain properly drawn general conditions, with the legal effect of which the architect should be cognisant. It is curious that among building owners there seems a much higher appreciation of what powers may be wielded under the specification than among the majority of architects, and I think the experience of most of my audience will bear me out when I say that often the first evolution of friction between an architect and his employer is when the latter finds in respect of some ordinary detail of procedure he is unable to restrain some contumacious contractor.

Architects have sometimes bewailed the dearth of legal decisions directly affecting their professional conduct. It certainly is an extraordinary feature that the conduct of architects and engineers has been less frequently called in question than that of almost any other profession. And while to me, as a lawyer, that should be perhaps a matter of regret, I cannot help regarding it as a very bright feature in the pages of legal history, and one fully worthy of those great professions—professions which of all others embrace infinite possibilities and confer lasting benefits on the inhabitants of the world.

Mr. A. Harston said they must all feel indebted to Mr. Macassey for the information he had given them in his paper. He had called their attention to the necessity of defining one's contract with one's client. It was always best not to be too bashful with a client. An understanding was soon arrived at by sending the schedule of the Institute to the employer, explaining that those were the terms under which you practised. The liability of the architect as an agent was important, because if he acts without proper authority and causes loss to a tradesman, the tradesman can recover. If the agent did not disclose his principal he was liable. It was therefore advisable for the architect never to make orders in his own name, but as the agent of his client.

Mr. H. W. Pratt proposed a vote of thanks to the reader of the paper. Mr. E. Greenop seconded the motion, supported by Messrs. H. T. Hare, A. Bolton, F. G. F. Hooper and C. H Brodie.

PROGRESS OF ARCHÆOLOGY IN SOUTHERN INDIA.

AT a late meeting of the Madras Presidency College Historical Association, Pandit S. M. Natesa Sastry read a paper on the "Progress of Archæology in Southern India."

Sir S. Subramania Iyer, the chairman, in introducing the lecturer, remarked that Mr. Natesa Sastry was one of the few graduates of the Madras University who took a great interest in the subject of archæology.

Mr. Natesa Sastry observed that in India the province of archæology was to investigate and determine the ages of old buildings by the style of architecture employed in them, to fix the epochs of ancient royal families that reigned in the country by studying the inscriptions, to arrive at the date of an inscription from the forms and dispositions of its letters and other internal evidences, to calculate the time of a coin by deciphering the legends on the same and taking into consideration any historical or quasi-historical anecdotes connected with it and to arrive at conclusions from these examinations by adopting the historical method of investigation. These researches sometimes went under the different names of ancient architecture, epigraphy or paleography and numismatics. In their Presidency very little was done in the name of real archæology till 1876, when Mr. Robert Sewell, I.C.S., took up the subject. He was a lover of antiquities, and whatever time he could save from his other duties he devoted to collecting all the information he could obtain on the subject in the districts to which he was appointed in his capacity as a Civil servant. In addition to these the study of inscriptions was known to no Hindoo of Southern India before 1881, and it was to a certain extent regarded as an impossible attempt. Even now curious ideas prevail in the south as to the writing of old inscriptions. The highly educated Hindu permanently living by the side of a temple if questioned as to the character in which an inscription in that temple is written will say that it is written in the Pancha-lipi or five characters—Grantha, Malayalam, Tamil, Telugu and Kanarese. How it is possible to write anything by a group of five different characters he does not consider at all. If instead of five he had said two, that statement would be more or less true accidentally, as most of the Tamil inscriptions in Southern India are written with a mingling of Grantha characters.

Thus Dr. Burnell prepared the way for reading the South Indian inscriptions and Mr. Sewell prepared the tabular statement of antiquities. The latter also compiled a table of inscriptions, fixed their dates for the future guidance of specialists and drew up genealogical tables and lists of all the known dynasties and great families in Southern India from the earliest times. Mr. Sewell's work was merely tentative, but he tried his utmost to give the best and latest information regarding the dynasties from the best available authorities.

It has often been said that we have no biographies or historical novels or anything approaching to history to guide us in determining the condition of our country in past days. This is to a certain extent true. A good deal might be done in the direction of reconstructing South Indian history by a critical and scientific study of inscriptions. Every village in India, especially in South India, contains a temple or two or some relic in which our ancient history is recorded. Taking examples from other nations we shall, like Bhagiratha of old, make unceasing attempts to work out our own chapters in the ancient history of India. If every one of our students will take it into his head to read, translate and comment upon the inscription found in or near his village he will be adding a paragraph to each chapter in our history. That my statement is true will become evident to any one who reads the report for the last year drawn up by my learned friend Mr. Venkayya, which is full of interest. On an average he has been reading one inscription every day, and he has filled up the missing gaps in several of the ancient dynasties. He has shown that Achyutaraya of the Vajayanagar dynasty, who was till now regarded as a very weak sovereign of that line, made several conquests in the south. His researches have added one more Sundara Pandya to the four existing already. Southern India has not the privilege of claiming many students who interest themselves in this kind of work, and if every one of us furnish his own quota of help I can with confidence state that within ten years from this date a correct history of Southern India of the Chola Pandya and other kingdoms will have been written.

The Chairman remarked that it was unnecessary for him to add anything to the very interesting lecture delivered by the learned lecturer. He did not think that anybody took a greater interest in the subject of archæology than he did. He read with interest matters connected with archæology. He assured them that any of them who were disposed to read the subject would then observe the real interest the subject possesses. If they did not acquire a knowledge of this subject it was difficult to learn what the past history and condition of society was. They had no real knowledge of their past history. They could acquire that knowledge only through the study of archæology. They had no Pandits who were able to explore the inscriptions in the temples in connection with the subject But there were great temples in which information could be had on the subject of the lecture. From a study of these they would find many things of the greatest possible interest touching on the history of the people of this country. He regretted that there were men like the late Mr. J. H. Nelson, who characterised their ancient institutions as things that had no existence in reality. To such men a study of archæology would be an answer to prove their reality. For they would then be able to prove their very existence in times past. In this connection he desired to draw their attention to the work of Dewan Bahadur S. Srinivasa Raghava Iyengar, who referred to the custom existing among people of exacting money for giving girls in marriage and pointed out how it had to be prohibited. So far as his experience in a court of law went archæology was of the greatest interest and immense use in tracing the pedigree of claimants. So far as temple litigations were concerned, there was ample field for the use of archæology. They would feel doubly interested about their own history by a study of archæology. The Western nations took a far greater trouble than anybody in this country to explore archæological researches.

In Southern India the progress made in the subject was mainly through the instrumentality of Government. In other parts of India men like the late Mr. Telang and others took at a very early time a good deal of labour in connection with the subject In their own Presidency the progress was rather late. They had in their midst men like the lecturer, and Mr. V. Venkayya devoting a deep interest and thus making it their life study. He would be glad if the Association would arrange for another lecture on the subject by Mr. Venkayya and allow him an opportunity to preside on that occasion.

The meeting then terminated with the usual vote of thanks to the chairman and the lecturer.

The usual meeting of the Glasgow Technical College Architectural Craftsmen's Society was held on Friday, the 9th inst., when papers were read on the "Specification of a Roof"—by Mr. D. Ritchie on "Joiner Work," Mr. Isaac Low, jun., on "Plumber Work," and Mr. J. Marshall on "Glazier Work." A good discussion followed, and its thorough practical nature was greatly appreciated by the members.

THE RHIND LECTURES.

THE subject of the course of Rhind lectures for 1900, in connection with the Society of Antiquaries of Scotland, is "The Edwards in Scotland." Mr. Joseph Bain, F.S.A. Scot., is lecturer. There was a large attendance of ladies and gentlemen, and Sir Arthur Mitchell presided. Mr. Bain began by remarking that the Rhind lectures had thrown no small light on the early history of our country. What he had to offer to notice embodied only his own researches in the archives of England for all papers relating to Scotland in the stormy era of the struggle for independence; and the subject of the dealings of the three English Edwards with Scotland was one, he ventured to say, that could never be without abiding interest to Scotsmen, and probably some matters not in common knowledge might arise to attract them. At the same time, he trusted they would not expect a succession of romantic adventures and hair-breadth escapes, for he could only relate the sober facts preserved in dry records. It might be asked—and with much point—why should Scotsmen resort to the public records of England for information on the history of our country during the long struggle for independence? The answer was that our records for that period did not exist; and in considering the reasons for this deficiency, the lecturer observed that it could not be doubted that in the conflagration of Holyrood Palace and Abbey, by command of Henry VIII., many precious documents of our history perished. Another noted personage, Oliver Cromwell, had been held responsible for the most fatal disaster to our records since the time of Edward I. (who had given careful orders for their preservation). Soon after his victory of Dunbar, Cromwell caused the records of the Scottish Parliaments and Courts of Justice to be removed to the Tower of London in 1651. There they lay till 1657, when the Council of State ordered their return to Scotland, and they (with considerable exceptions), to the number of nearly 1,600 volumes, were now in the General Register House. A few papers still remained in London, being signet letters of the reigns of Mary and James VI., evidently relics of what Cromwell had removed. No inventory of the documents withheld was in existence, and their nature could only be conjectured; but it was not improbable they were public instruments of the kind from which Lord Haddington made his copies or notes earlier in the century of their removal, when there must have been many extant. After the Restoration, all that were supposed to remain in the Tower were shipped for Scotland, but no fewer than 85 hogsheads of these were irretrievably lost in a storm in the voyage between London and Leith, while the remainder had been neglected and left to rot in damp cellars. On the application of the Dean and Faculty of Advocates, to their honour it might be remarked, a partial examination of the surviving hogsheads was made in 1753, under the authority of the Court of Session; but at the close of that century they still lay in their cellar till all our records were removed to the General Register House in order that the injuries of time and neglect might be remedied. The story of the destruction, the lecturer went on, at least disappearance, of the earliest and many of the later records of Scotland was a calamity for which no one man, king or republican, could be held responsible, but was due rather to the causes that had proved so disastrous to so many of, on the whole, the better cared-for records of England. This much was certain, that so far as negative evidence went none had been cut up into cartridges, as was done to many official Norman records in the first French Revolution, or, worse still, been treated as the oldest records of the Palatinate of Durham, many chests of which were burned by the executors of Bishop Cosin at the close of the seventeenth century, to prevent, forsooth, questions among his heirs—a proceeding justly styled by the late Sir Thomas Hardy as a "nefarious holocaust." Passing on the lecturer showed how the two questions—the alleged destruction of the old Scottish records by Edward I. and the superiority of England over Scotland—came to be mixed up, and how the search for documents disproving the latter kept alive the tradition as to the former; and, in closing, he briefly glanced at the early relations of the two countries, and at the state of Scotland at the time of the melancholy death of Alexander III., near Kinghorn, on March 19, 1286

At the second lecture Mr. Bain narrated the circumstances connected with the brief reign of Margaret, the grandchild of Alexander III., and Edward's earnest negotiations to bring about a marriage between her and his son, and then gave details of the convention held at Norham in 1291, with Edward I. as umpire, for the purpose of settling the succession of the Scottish Crown. On November 17, 1292, in the great hall of the castle of Berwick-upon-Tweed, Edward awarded the Crown of Scotland to John Balliol, as grandson of Margaret, eldest daughter of the Earl of Huntingdon. Goaded by Edward's insolent acts of interference as over-lord with lands in Scotland, Balliol renounced his allegiance in October 1295 and despatched an army to the western border of England, which wasted the country as far as Hexham in the following March. The lecturer having given an account of Balliol's defeat with great slaughter on April 27, 1296, and his subsequent surrender and captivity, narrated the triumphal progress of Edward I. through Scotland as if undisputed sovereign. Starting from Roxburgh he went as far north as Elgin, taking the submissions and homages of the ex-King John, the bishops, barons and chief men at various places on his way. This journey lasted from May 13 till August 28, 1296, when he returned to Berwick-on-Tweed, holding a Parliament there, where all the high personages (except Balliol, now removed to the Tower of London) again swore fealty, with the addition of the whole community of Scotland, great and small, from Caithness to the Rhinns of Galloway. This famous transaction was recorded in the "Ragman Rolls," as they called them there, compiled from the original homages to which the seals of the granters were attached. There were nearly 2,000 names enrolled, but only seventy of the original oaths were extant, and the seals of these and of the many that had perished numbered nearly 800. This Roll, of which there were three copies, all in the same hand, was only known in the Public Records by numbers (88, 89, 90 of the Tower miscellaneous rolls). It was not certain how the name Ragman was applied to it. But, however styled, it was the *libro d'oro* of Scotland, and in spite of its degrading origin there were few of our ancient families who were not pleased to point to an ancestor there, or modern who would rejoice to discover one. He had been thus particular in describing it, for there was a general belief that not only the signatures (in the modern sense), but also the seals of the homagers were attached to the Roll. Neither was the case. The seals only were hung by strings in a peculiar manner to the original documents, and might still be seen on those that survived. A statistician might find from the Roll some data, slender enough, no doubt, whereby to form a rough estimate of the population in the thirteenth century. One would think it must have been reckoned by a few hundreds of thousands only. Proceeding, Mr. Bain recounted the irritation produced in Scotland by Edward's ordinances, such, for instance, as his appointments of Englishmen as governors, and his command on January 31, 1296-97, that no Scotsman be allowed to leave the kingdom, and the risings of Wallace and of Bruce, Douglas and the Bishop of Glasgow to which it led, with accounts of the battle of Stirling Bridge and the battle of Falkirk. At midsummer of 1300, having mustered a considerable force at Carlisle—6,000 men—Edward, with his son and barons, joined them there, and after taking Carlaverok in July marched through the borders of Galloway, reducing it to partial submission. The king remained during that autumn at Carlisle and the bishop's castle of La Rose, also spending a week at Dumfries in October, where he ratified the truce granted to the Scots at the mediation of France till Whitsunday 1301. The English Warden, with about 100 horse and 300 foot, held about this time a sort of English "Pale," extending in the north from Edinburgh to Kirkintilloch, on the east from Dirleton to Berwick-upon-Tweed, on the south from Roxburgh and Jedburgh to Liddesdale, and on the west, including Dumfries, Lochmaben, Carlaverok and some other castles. The truce having expired and the barons denied the Pope's jurisdiction in temporal matters, or his power to decide their king's rights over Scotland, Edward made ready for a further campaign, and ordered musters of 12,000 foot at Berwick-upon-Tweed by midsummer 1301. The Prince of Wales being now sixteen years of age, was entrusted with a separate command under the guidance of the Earl of Lincoln and other experienced nobles, and appointed to invade Scotland from Carlisle. This he did, marching by Dumfries into Galloway, but getting no further than the Water of Cree, whence early in October he returned to Carlisle, finally rejoining his father at Linlithgow on December 30. The king's army, which numbered about 700 foot and 400 or 500 horse, marched from Berwick by Selkirk, up Tweedale to Peebles, then by Biggar to Carstairs, down Clydesdale to Glasgow, and after taking Bothwell Castle early in September, which he a month before had bestowed on Aymar de Valence, Edward I. prepared to secure his hold on Scotland by wintering at Linlithgow. Mr. Bain concluded his second lecture with a short account of Edward's piety.

In the third lecture on the Edwards, Mr. Bain said:—Edward I., who was now at Linlithgow, ratified the truce with the Scots till St. Andrew's Day, 1302, and in February 1301-2 he returned to England, appointing on the way many keepers of Scottish castles. Next Mr. Bain narrated the rising in 1302-3 of Comyn and Sir Simon Fraser, and the battle of Roslin, which led to Edward's great preparations for invasion. Edward summoned between 10,000 and 12,000 men, including 1,000 provided by the Earl of Carrick himself, to muster at Roxburgh, besides a large contingent from Ireland, and also caused two fortified wooden bridges to be constructed at King's Lynn to pass his army over the Forth, which were shipped in May 1303 for Scotland in 30 vessels, escorted by four men-of-war, flying the St. George's ensign, the first mention the lecturer had seen of this now time-honoured flag, also preparing many powerful engines for siege operations. Mr. Bain described Edward's march from Roxburgh to Elgin in 1303, when he took the castle of Brechin, stripping the lead off the roof of the cathedral for his engines, which, however, he restored to the bishop at a later date. On leaving Kinloss Edward marched to Dunfermline, reaching it early in November, and spent the winter there, being joined by the queen (his second wife) at the end of the year. Mr. Bain next related the surrender of Comyn and his followers, and, at some length, Edward's siege of Stirling Castle in 1304. The garrison having been compelled to surrender, Edward remained at Stirling for several weeks, and feeling insecure while Wallace remained at large, he held out inducements to capture him. After resting at Holyrood, he left it on August 16, marching by Pentland and Eddleston to Peebles, then by Traquair and Selkirk to Jedburgh by the 21st, resting at Yatham, in the Cheviots, until the 24th, and then going homewards by Newcastle and Durham to York. There were two valuable rolls kept by English officials for this period which formed the only guide we had for the then internal state of Scotland. The first of these was for the years 1302, 1303 and 1304, and showed the revenue drawn for the counties of Lanark, Peebles, Ayr, Dumfries and Annandale, with much interesting detail. The other, unfortunately much damaged, was a compotus of the royal domains in English possession from Caithness to Galloway between April 1304 and February of the next year. It rendered account besides land revenue of the customs at various ports. The receipt was nearly 1,400*l.*, more than 17,000*l.* of the present day. Another interesting document was the Household Roll of the Prince of Wales for the year from November 20, 1302, to November 1303, during most of which latter year he was in Scotland. Having told the circumstances surrounding the capture of Wallace and shown that Sir John Menteith's part in the affair was a matter of routine and might have been Bruce's, he detailed the regulations made by Edward for the good government of Scotland, and said there was a prospect in Edward's view of a happy end to his long labours, when, while he was resting in profound security at Winchester, there reached his ears in the second week of February 1305-6 dismal news of Comyn's murder and Bruce's rebellion. Mr. Bain concluded the third lecture of the course with an account of the desperate measures of vengeance now taken by Edward, whose fiery energy, he said, was never more apparent than in these last eighteen months of his life.

At the fourth lecture of the series, Mr. Bain took for his subject "Edward I.'s Death—Edward II." Having dealt with Bruce's two defeats and desperate condition, and his subsequent retreats, the lecturer remarked that this critical time in Bruce's career was described by Barbour with much picturesque detail, and it gratified him in no small degree to find the old Archdeacon's story so closely in accord with the English records. Nor was the raid by Aymar de Valence to surprise Bruce at Glen Trool unnoticed. For in these months of early spring, between February and May, his position seemed desperate, because by Edward's own direction strong detachments invaded the district or watched the passes. That he managed somehow to evade them was clear if, as Barbour declared, he defeated De Valence at Loudon Hill on May 10, 1307. The English historians said the date was towards the end of March, but Barbour's date was supported by two letters, both of May 15—one from Carlisle commenting on Edward's improved health and hope to enter Scotland, his displeasure that his forces had retreated before "King Hobbe" (as he called Bruce), and his reviewing his cavalry at Carlisle decked with leaves in honour of the day of Pentecost. The other letter, probably from Sir Alexander Abernethy at Forfar, spoke of Bruce's success, and his own preparations against his coming that way. Though Loudon Hill was not decisive, the tide soon began to turn in Bruce's favour, with the death of his relentless enemy on June 7 at Burgh-on-Sands, in sight of the country he was not to enter again. So firm was Edward's resolve in his last hours that on the death of his favourite daughter Johanna, Countess of Clare, at Carlisle in May, he devolved her funeral obsequies on others, and summoned a levy of 1,000 Welshmen from her territory of Glamorgan to march without delay to Carlisle to pursue Bruce. No more fortunate event could have happened for Scotland than his death at this juncture, for the sceptre dropped by his resolute hand was grasped by that of a feeble successor, ill-fitted to put down the aroused nationality of Scotland, led by the genius of Bruce. The lecturer did not know the grounds for the often cited story that Edward I. ordered his bones, wrapped in a bull's hide, to be placed in the van of his army invading Scotland, and not to be buried till its subjection; but whether true or not, the new king disregarded this command. He (the lecturer) did not know the author of the famous inscription on the great king's massive tomb in Westminster, but the idea had often occurred to him that the solemn close, "Pactum serva," might be his own words on the broken faith of the great men of Scotland, who had so often deceived him.

Proceeding, Mr. Bain described Edward II.'s marches to Scotland and the consequent emboldenment of Bruce, and the parleys that took place with his envoys. In glancing at the great dissensions that took place between Edward and his nobles, and the opportunity Bruce made of this to ravage the North of England, the lecturer observed that so incessant were these inroads that his subject for this period (1311) might be entitled "The King of Scots in England," rather than "Edward II. in Scotland." Going on, the lecturer said the records proved beyond doubt that many of his own countrymen, and even near neighbours in Annandale, were long hostile to the King of Scots, but in spite of this Bruce's fortunes improved, while the state of Edward's Scottish adherents became insupportable; and from this point the lecturer carried his hearers through the events which preceded the great day of Bannockburn. On this, he added, so much had been written that he need not dwell on it longer than to say that, following the authority of David Hume and the records, he felt tolerably satisfied that the numbers of both the armies had been greatly exaggerated, probably doubled, a tendency not solely confined to Oriental minds, but common to old chroniclers of all nations.

ECCLESIASTICAL DILAPIDATIONS.

A SCHEME for keeping up glebe buildings was presented to the recent St. Albans Diocesan Conference. It suggested that a fixed sum be paid annually as insurance, and that all dilapidations be made good as they occur by the insurers, as follows:—(*a*) In small matters, such as slight damage to a roof by a gale, &c., notice to be sent to insurers with maximum cost of repairs. Insurers may either consent at once or send a surveyor to report. No repairs will be paid for by insurers of which notice has not been given and the execution of the work approved previous to such work being commenced. On the completion of the work payment to be made by the insurers on production of sufficient vouchers. (*b*) In great matters the insurers may send a surveyor from time to time after due notice to incumbent, and in all cases of voidance of a benefice to report. Such works as he orders to be done within six months, at times convenient to incumbent, by tradesmen approved by the surveyor and certified by him as satisfactorily carried out. The insurers undertake to do all external paint—three coats, at least—and tarring, &c., every five years (or in town parishes every three years). A list of fixtures should be drawn up and valued by the insurers and paid for by the incumbent on his succession to a benefice. This list to be preserved by the incumbent and to be the only evidence of possession. If it could not be produced such fixtures to pass with the house and buildings, but not to be liable to dilapidation charges. A new valuation should be made for each new incumbent in cases where the original list was produced. It should be the duty of the insurers to fix the amount of premium payable out of the income of each benefice annually to meet the liabilities of dilapidations as defined above. Such premium to be a first charge on the revenue of the benefice and to be due annually on January 1 and recoverable in the same way as now are the fixed payments to Queen Anne's Bounty, such insurance to include the usual insurance against fire. The insurers should be empowered to raise or reduce all premiums according to scale, say, every seven years. Such increase or decrease to apply to all benefices alike, and not to the particular benefices in respect of which profit or loss may have accrued. Any profit made should be paid over as bonus every seven years either (*a*) to incumbents *pro rata* or in reduction of premium; (*b*) to the bishops of the different dioceses, also *pro rata*, to be by them distributed among societies existing for the pecuniary assistance of the clergy in their dioceses. Two bodies suggest themselves as insurers—the Ecclesiastical Insurance Company, Limited, or Queen Anne's Bounty. It would fall most easily within the scope of the former.

The Parish Council of Kilmalcolm have decided to erect new Council Offices. Plans have been prepared and the contractors decided on, and when the formal approval of the Local Government Board is obtained work will be proceeded with immediately. The plans show a fine structure, comprising offices on the ground floor and inspector's house above. The cost is estimated at about 1,200*l.* The members of the United Presbyterian church have also decided to erect a new church on a piece of vacant ground near by. This step has been rendered necessary owing to the want of sitting accommodation in the present church, the membership of which has grown considerably within recent years. The new church will cost about 3,000*l.*

Correspondence

Chatwood's Safes.

Messrs. Chatwood & Co., London.

Dear Sirs,—It may interest you to know that during the siege of Pekin, after the staff of this Bank had taken refuge in the British Legation, the Boxers and Chinese soldiers attempted to open the treasury door with which you supplied us, but were apparently unable to do so. As we were in the Legation for two months, and our Bank was outside the line of defence, they had ample time in which to work; and when I visited the house on the arrival of the relief force I found they had been unable to open the door, but had dug or cut through the walls of the treasury.—Yours faithfully,

(Signed) M. H. HOUSTON, Manager of Pekin Branch.
Imperial Bank of China, Shanghai:
October 8, 1900.

GENERAL.

Sir George Lewis has purchased the Danish pavilion at the Paris Exhibition. This building, which is richly carved, was brought from Denmark to Paris and erected under the supervision of the architect and artists. It will now be brought to Overstrand, in Norfolk, where Sir George Lewis intends to use it as a country house.

The University of Oxford have granted 200*l.* from the Craven Fund to Mr. Grenfell and Mr. Hunt for expenses of a journey to Egypt in search of papyri.

The Late Duke of Saxe-Coburg's Collection of art glass is now being exhibited at the Coburg fortress. It comprises 1,100 items, valued at over half a million marks.

Plans for the Reconstruction of the new Imperial Theatre at Westminster have been just submitted to the County Council by Mr. Verity, Mrs. Langtry's architect. The interior is to be entirely rebuilt, and it is hoped that it will be ready for reopening by May 1.

An Offer by Mr. C. W. Bartholomew to contribute the funds for the provision of a fresco or panel in the ambulatory of the Royal Exchange, in commemoration of the services of the City Imperial Volunteers, has been accepted. Mr. Frank Brangwyn has designed a panel, the gift of Mr. T. L. Devitt, the subject being "Modern Commerce."

The Visiting Committee of the new asylum for East Sussex reported at the meeting on Tuesday that the architect made application for payment of his commission, in accordance with the practice adopted by H.M.'s Office of Works, which provides that the architect's commission on all contracts shall be paid as follows:—One-third part on the execution of a contract; one-third when half the contract sum was paid to the contractor; and the remaining third on completion of the contract. The committee approved the application, and requested payment of a sum of 3,813*l.*, being one-third of the commission payable to the architect on the execution of the superstructure contract.

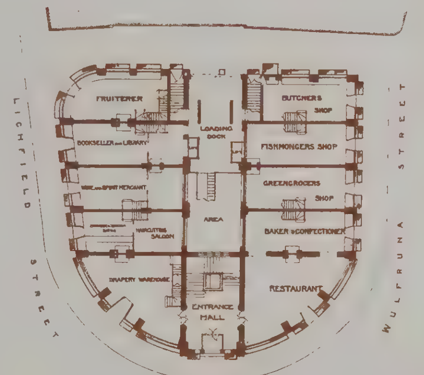
The 1900-1901 Session of the Leeds and Yorkshire Architectural Society began on Monday last, when the president, Mr. W. Carby Hall, delivered the opening address, previous to the distribution of prizes, and ending up with a smoking concert. The following papers will be read at the fortnightly meetings:—"The Dome as the Basis of an Architectural System," by Mr. A. T. Bolton; "The Leeds Infectious Hospitals," by Mr. Edwin T. Hall; "The Old English Village Church," by Professor Baldwin Brown; "Domestic Work," by Mr. F. Rowntree; "The Planning and Design of Churches," by Mr. H. C. Corlette; "Logical Building and its Influence on Design," by Mr. Geoffry Lucas; "French and English Abbeys," by Mr. Francis Bond.

The Institution of Junior Engineers will hold on Friday, November 23, at 7.30 P.M., a joint meeting with the Architectural Association at 9 Conduit Street, W. A paper on "The Use of Rolled Joists in Construction" will be read by Mr. A. T. Walmisley, M.Inst.C.E.

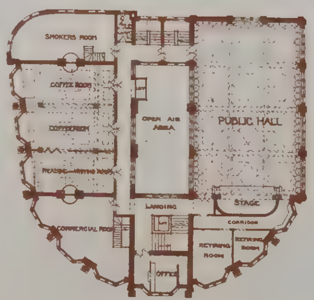
The Society of Arts will hold the first ordinary meeting of the 147th session on Wednesday, November 21, at 8 P.M. The opening address will be given by Sir John Evans, K.C.B., F.R.S., chairman of the Council.

At the Ordinary Meeting on Tuesday (November 20) of the Institution of Civil Engineers, the paper on "The Metropolitan Terminus of the Great Central Railway," by Messrs. George Andrew Hobson and Edmund Wragge, MM.Inst.C.E., will be further discussed; and time permitting, a paper will be read on "Machinery for the Manufacture of Smokeless Powder," by Mr. Oscar Guttmann, M.Inst.C.E.

LIBRARY
OF THE
UNIVERSITY of ILLINOIS.



GROUND PLAN



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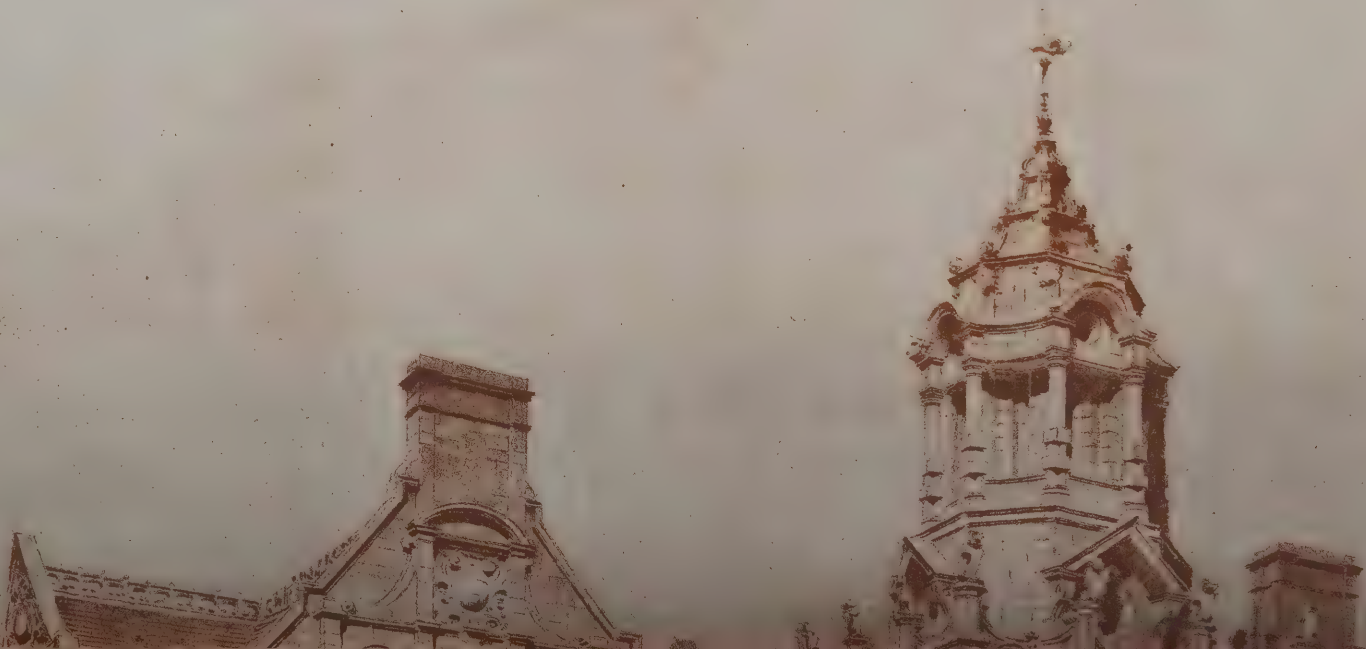

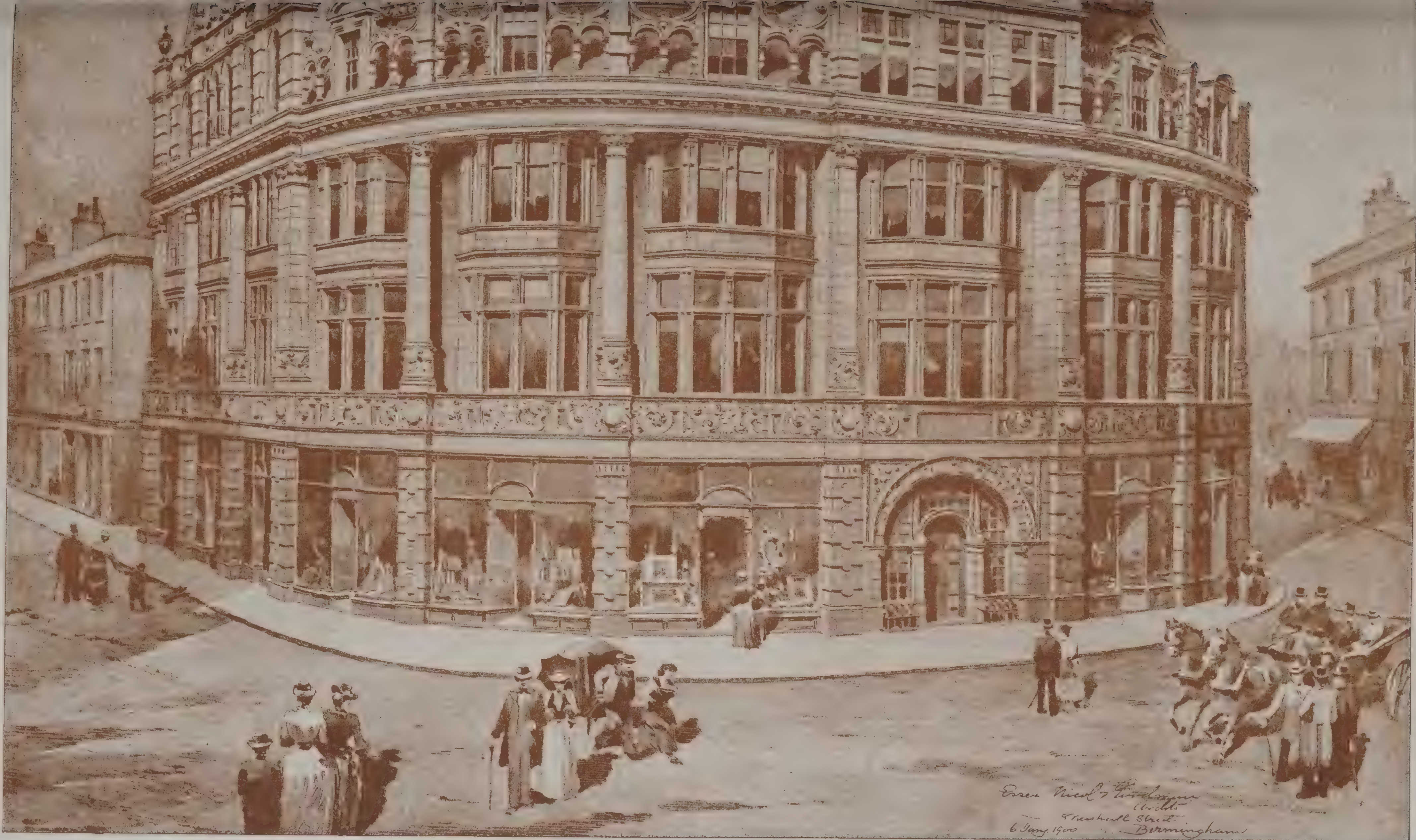

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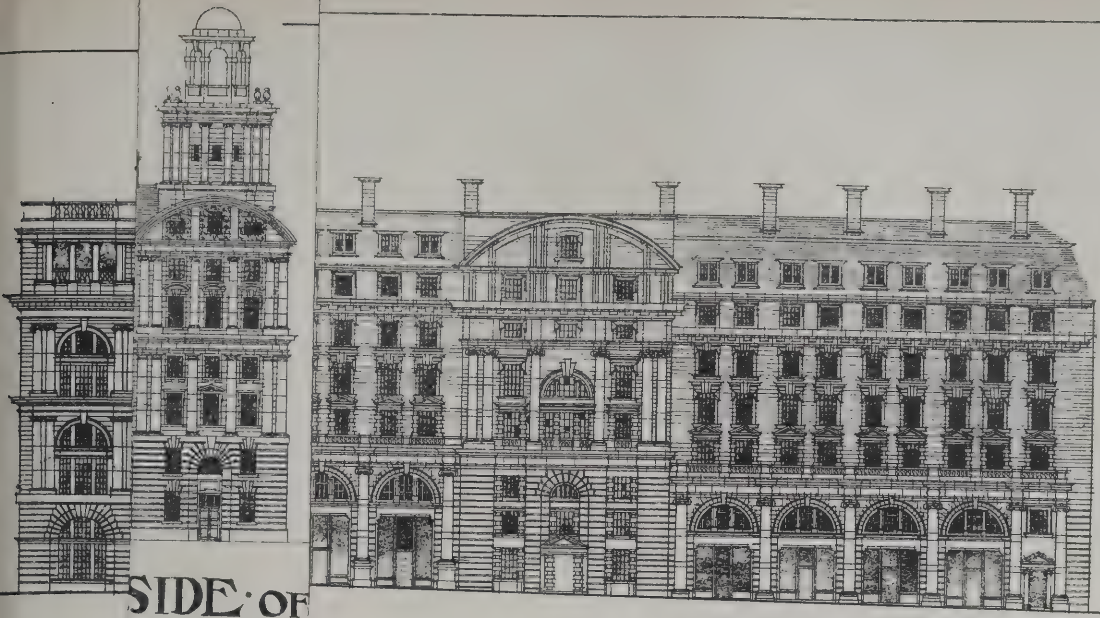
ROYAL LONDON BUILDINGS, WOLVERHAMPTON.

FOR THE ROYAL LONDON FRIENDLY SOCIETY,
6 Paul Street, Finsbury, London.

Messrs. ESSEX, NICOL & GOODMAN, Architects.



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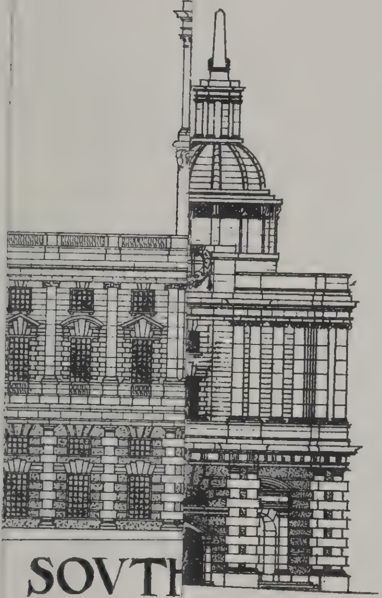

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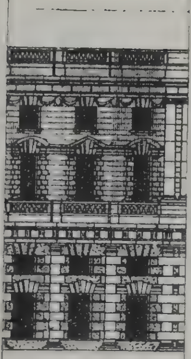

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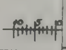
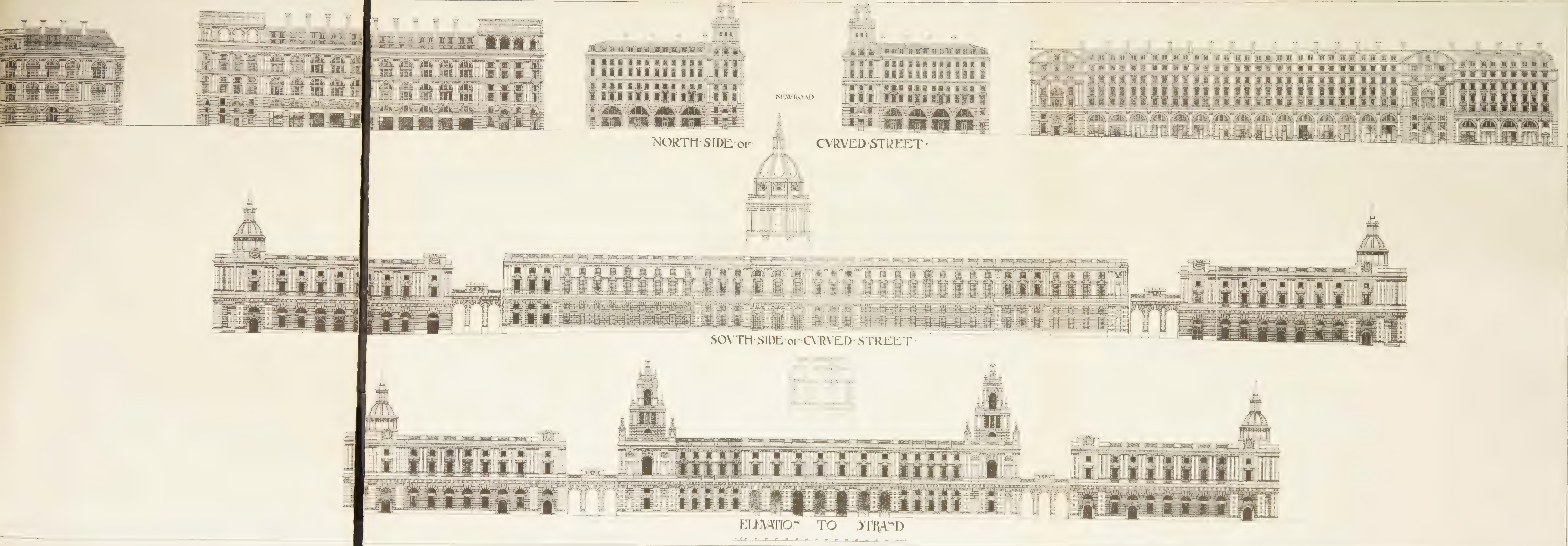


NTY COUNCIL

PHOTO-LITHO. SPRAGUE & Cº LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.



NORTH·SIDE·OF CVRVED·STREET·

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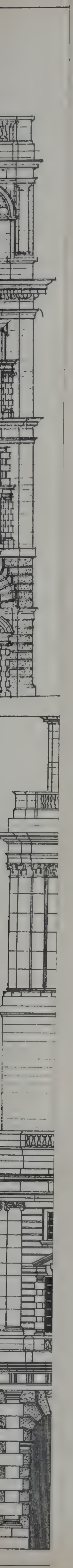
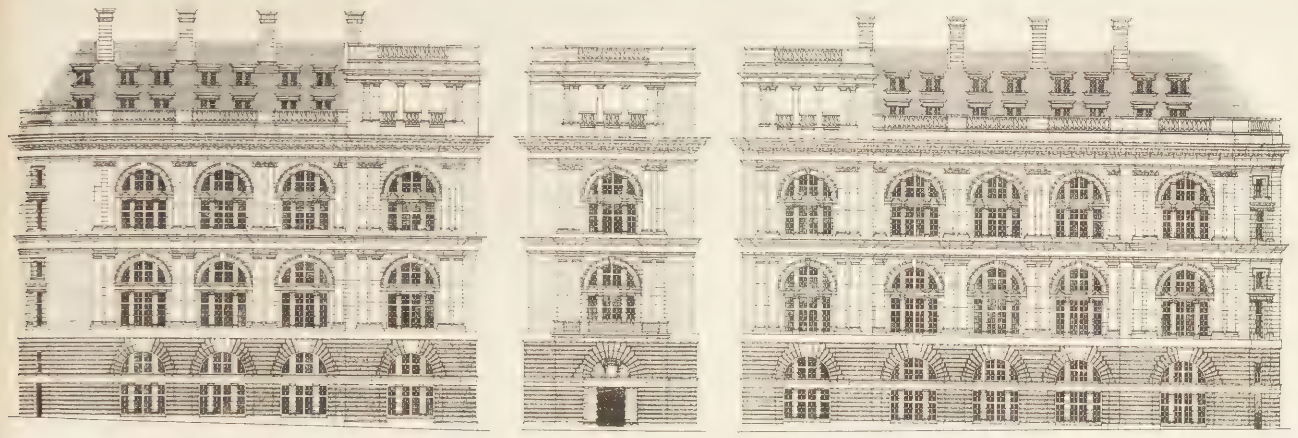
ELEVATION TO STRAND

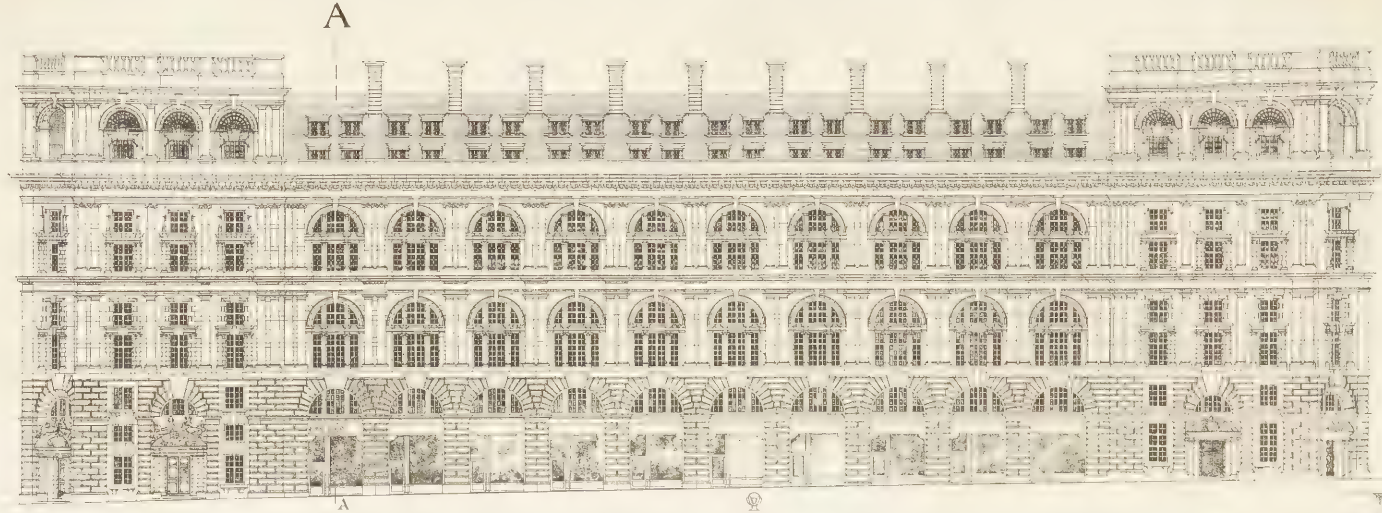
THE LONDON COUNTY COUNCIL HOLBORN AND STRAND IMPROVEMENT. DESIGN No. 19



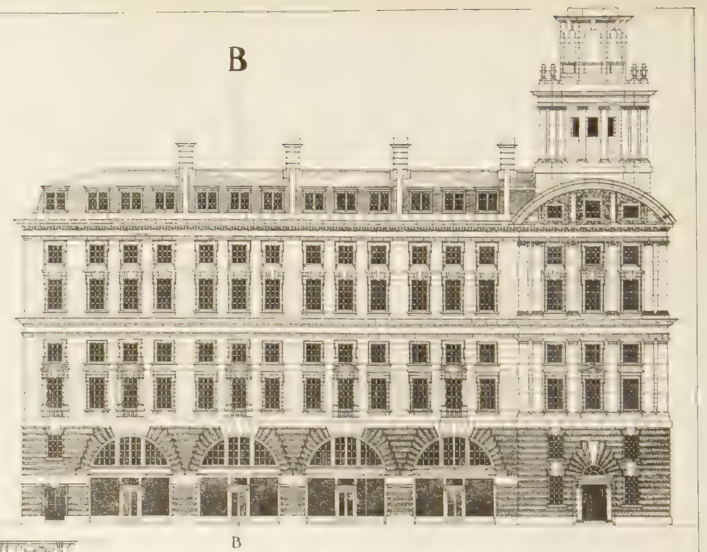


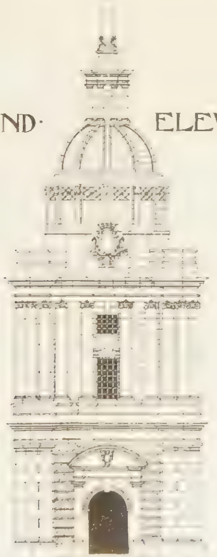
WEST SOUTH EAST

ELEVATIONS OF MORNING POST BLOCK.



NORTH SIDE OF CURVED STREET.





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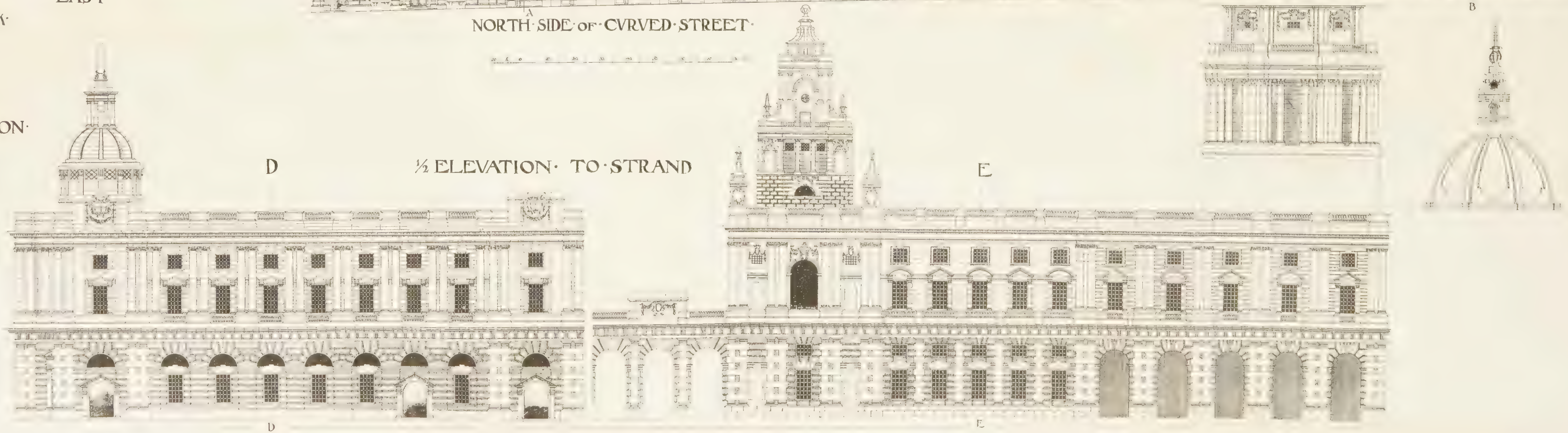

½ ELEVATION TO STRAND

The Architect.

THE WEEK.

Among the notices of application for Parliamentary powers in the coming session is one by which the Commissioners of Her Majesty's Works and Public Buildings seek to acquire by compulsory purchase or otherwise certain property adjacent to the west side of the National Gallery—"lands, houses and buildings, bounded on the north by stables belonging to and in the occupation of the Earl of LONSDALE, on the east by the National Gallery, on the south by Pall Mall East, and on the west by 11 Pall Mall East and 5 and 9 Monmouth Court, and to stop up and appropriate a portion of Monmouth Court." The property to be acquired is, of course, intended to insure the isolation of the National Gallery, which, according to many authorities, is for students of painting the most useful collection in all Europe. When the building was erected the danger of fire was more remote than it is in our time. The value of the paintings was underestimated, and several other reasons combined to make the Trustees imagine that WILKINS's building was entirely adequate for its purpose, regardless of the contiguity of houses over which there was no official control. Great care has undoubtedly been taken of the National Gallery, but since it was found that some of the neighbouring buildings are sources of danger, the Government are acting rightly in making preparations which will greatly minimise the risk of fire.

It is remarkable that while in England there is confidence that the Government will not hesitate to make the National Gallery secure regardless of the cost, in Paris there is doubt whether anything can be done to preserve the invaluable collections in the Louvre. Frenchmen easily become desponding and then apathetic. At the present time they are overmastered by the conviction that the Louvre is doomed to destruction. The adjoining buildings have been utilised by Government departments, and every sheet of foolscap brought in is supposed to add to the dangers of a conflagration. Apparently it would not be a difficult task to remove the documents, most of which can only be regarded as waste-paper. But the official spirit is too strong in France to allow of the adoption of so simple a remedy. The apprehension of a great fire is not excited among admirers of the paintings of the old masters alone; it has taken possession of living painters. Many artists who will be exhibitors in the rival salons of next year are convinced that their works will not leave the new palace of art in the Champs-Elysées in as perfect a condition as they entered. The galleries are supposed to be flimsy in construction and unable to resist a fire. The dread may only arise from overstrained nerves, but there is no doubt of its existence, and the quality of the works now in progress must be injuriously affected by it.

The annual report of the Egyptian Public Works Department contains, as usual, much information about the progress in the Nile Valley, which is the result of engineering works carried out by Englishmen. Although irrigation and water regulation may be considered as the principal duty of the Department, there are other undertakings of which the utility is manifest, and must play a large part in the future of Egypt. The Department of Public Buildings, which is under the care of Mr. ARNOLD H. PERRY, expends on an average 400,000*l.* a year. If competent assistants were available there can be no doubt that more could be shown for so large an expenditure. Mr. PERRY finds the greatest difficulty in obtaining architects of that class. Sir WILLIAM GARSTIN declares that young architects decline to take up work in Egypt. The engineers employed as assistants do not appear to be more efficient than the architects. Mr. PERRY says that not 5 per cent. of his "Tanzin" engineers are capable of estimating or carrying out a single project. As the public works will in the future comprise a large area, for operations in the Soudan must be undertaken, the difficulty of procuring qualified architects will increase. There are undoubtedly many young architects and engineers in England who would be willing to add to their experience by taking part in the public works of Egypt. But the whole administration is enveloped in so much mystery, the course to be followed for obtaining appointments is not sufficiently known.

At the meeting of the London County Council on Tuesday a report was presented by the improvements committee relating to the drawings of the buildings proposed to be erected fronting the Strand and on the crescent road to be formed between Wellington Street and Clement's Inn. The name of the architect submitting a particular design was not known, because it was arranged that the designs should not be signed, but the name of each architect placed in a sealed envelope. As each design was received a number was placed on it, and also upon the outside of the sealed envelope. The numbers used were 17, 19, 20, 21, 23, 26, 27 and 29. The public exhibition of the designs having taken place the envelopes have been opened, and the following were found to be the names accompanying the designs:—17, Mr. ERNEST RÜNTZ; 19, Mr. EDWARD W. MOUNTFORD; 20, Mr. MERVYN MACARTNEY; 21, Mr. REGINALD BLOMFIELD; 23, Mr. ERNEST GEORGE; 26, Mr. HENRY T. HARE; 27, Mr. WILLIAM FLOCKHART; 29, Mr. LEONARD STOKES. The designs are now the property of the Council, as it has been arranged to pay the agreed sum of 250*l.* to each of the eight architects. It was not announced whether any further steps would be taken by the County Council in regard of the eight designs. But it cannot be doubted that the value of them far exceeds the amount which has been paid in premiums.

The Kensington Vestry having been superseded, Dr. ORME DUDFIELD, the medical officer of health, takes the opportunity of his last report to give a retrospect of the results of the sanitary work which represent the period between 1855 and 1900. In 1851 the population was recorded at 44,053. This year it is estimated at 173,000. In 1856 the density was 20 persons per acre; in the present year it is 79. The statistics of the number of houses erected are not as complete as is desirable. It is known that building operations on a large but variable scale were going on during the years 1871-81, which witnessed an increase of nearly 43,000 to the population. The increases to the number of inhabited houses on the rate books varied much from year to year, having been approximately 456, 471, 714, 747, 777, 500, 396, 389, 491 and 490 in the successive years—total in the ten years, 5,431. Previous to 1871 no information of yearly increases is forthcoming; but it would appear that between 1851 and 1871, *i.e.* in twenty years, there was an increase of 9,599 houses, including 6,261 in the decade 1861-71, during which the population underwent an increase of 50,000. The number of persons to a house appears to have ranged between seven and eight in each census year, 1851 to 1891 inclusive. In those houses which are used mainly by the working classes much has been done in Kensington to diminish the dangers which too commonly exist in that class of building. In 1885 the Vestry prepared "Instructions for the guidance of the Sanitary Inspectors when inspecting Houses," under which the drains of many thousands of houses have been reconstructed, trapped, ventilated and provided with manholes, &c. Practically, moreover, all waste-pipes of sinks, cisterns, baths, &c., have been disconnected and made to discharge over or near surface gratings outside the house. Very many yards have been more or less efficiently paved and drained, and altogether a great improvement has been effected in the condition of the houses inhabited by the poor and working classes. Dr. DUDFIELD's statistics form a convincing argument in favour of the administration of the Kensington Vestry and its influence on the health of the district, and he can claim an important share in the remedial measures which were adopted on his recommendation.

THE REPORT OF THE BOARD OF EDUCATION.

When affairs are in transition we must expect indefiniteness. On that account it is difficult to say how much of what is found in the Report of the new Board of Education relates to the reformed or the unreformed system, hitherto known as the Science and Art Department, which was replaced by the Board of Education on April 1, 1900. But as the last Report of the Department was dated July 1, 1899, the operations between that date and the middle of the present year have to be noticed by those who may not have approved, although they dare not repudiate, them. A departmental committee was appointed in July 1899 to consider the relations between the Board of Education and the Science and Art Department. As a result, many changes have taken place in the administration, and new appointments were made and filled. Among others, a Council of Advice for Art, consisting of four experts, has superseded the Directorship for Art, the members being Sir W. B. Richmond, R.A., Messrs. T. G. Jackson, R.A., E. Onslow Ford, R.A., and Walter Crane, A.R.W.S. Their duties are to advise the Board on matters affecting the Royal College of Art, on the syllabuses of instruction and examinations, and on subjects connected with the art museums. Whether the Council of Advice will be able to do much for industrial art remains to be seen; but the Board of Education, being still in the sanguine period of existence, expresses the hope "that the different interests of various branches of art may be properly co-ordinated to the greater efficiency of each." Officials will, perhaps, be able to understand the phraseology, but to the public in general the words will only appear as one of the stereotyped formulas which sound well but are never substantially realised.

The accommodation at South Kensington being restricted, some of the shortcomings of the former administration may have arisen from that cause. New chemical and physical laboratories are in course of erection opposite the Imperial Institute, and alterations are about to be undertaken which will increase the space assigned to art study. Some progress has been accomplished with the foundations of the new buildings for the Victoria and Albert Museum. Much use has been made of the art objects in the museum by exhibitions in the provinces, and a similar employment of collections of scientific instruments and apparatus has been attempted.

One important change which will affect students is now in progress. Examination will no longer be the sole recognised test by which grants to science and art schools will be determined. Inspection of a more thorough character will be substituted. Only in the advanced subjects in art and the advanced and honours stages in science will examinations be continued, unless in cases where the school or class will be willing to pay expenses. In order to provide sufficient means for inspection a senior chief inspector and three chief inspectors have been appointed, and it is also contemplated to increase the staff by four inspectors and eight junior inspectors.

The reports of the examiners for the year 1899 show the usual diversity of opinion. In building construction, Colonel Seddon and Mr. T. Blashill report there is again a considerable increase in the number of candidates, namely, 1,076 more than last year. Many of the schools show very weak drawing and a great want of accurate drawing to scale. The teachers should warn the candidates against wasting valuable time over unnecessary work, such as shading to imitate the grain of woodwork, hatching, &c. It is also said that five of the candidates who did sufficiently well in practical examinations in honours were summoned to South Kensington to undergo a further practical examination in building. One candidate only obtained 80 per cent. of the maximum marks awarded for this part of the examination.

Concerning the drawings produced in schools and classes there appears to be no less variety in the judgments of the examiners. For example, in architecture, the examiner, Professor T. Roger Smith, says:—"The number of candidates sitting in this subject in 1899 is slightly in excess of that of last year. There is, however, a perceptible difference in the quality of the work, though possibly not more than accidental fluctuations may account for; put shortly, I consider that at both ends of the scale this year's work is not so good as last year's, but that the medium work is better." According to him the number of competitors in architectural design is 134, a very large advance on the total in 1898, which was seventy-nine, and more than double the total of 1897, which was sixty-six. This increase in numbers has been not unnaturally attended by a sensible decrease in the average standard of excellence. But at the same time it is not clear to Professor Roger Smith that increased numbers fully account for that decrease. The examples of architectural design sent in for the National Competition were examined by Mr. G. F. Bodley, A.R.A., Mr. T. G. Jackson, R.A., Mr. Aston Webb, A.R.A., who report: "The number of works submitted to competition is larger than last year, and there are a few good designs, but, speaking generally, the level of the work is distinctly below that for several years. The masters would do well to set their students less ambitious subjects than those often given, such as large town halls, &c., which are quite beyond the experience of the students." The examiners of drawings from measurements, viz. Mr. J. Belcher, Mr. T. G. Jackson, R.A., Mr. J. J. Stevenson, regret that the general standard of the work is lower still than that of last year. On the other hand they think that masters have shown greater discretion in the selection of good subjects for the students to study.

The rebuilding of the museum has necessarily caused the removal of various objects, and it was not to be expected that many additions would be made to the contents. But there have been several interesting purchases. For a collection of printed and woven fabrics and embroideries 700*l.* was paid. Two Persian brocades of the sixteenth or seventeenth century, and an example of Turkish velvet of the sixteenth century cost 256*l.* 13*s.* A woollen cloth chasuble with *appliqué* embroidery, coming from Iceland, and of the sixteenth century, cost 30*l.* The Dean and Chapter of Norwich have presented fragments of vestments found in the fifteenth-century tomb of Bishop Lyhert at the cathedral. Some carved oak panelling, dating from the beginning of the sixteenth century, was obtained from a house near Waltham Abbey for 375*l.* For a collection of Italian leather (*cuir bouilli*) and *gesso* objects of the fourteenth and fifteenth centuries, and a spinet in a painted and gilt pine case, by John Francis Antegnati of Brescia, dated 1537, 501*l.* 15*s.* was paid. One collection of French woodwork cost 133*l.* 0*s.* 7*d.*, and another 174*l.* 14*s.* 6*d.* Additions have also been made to the sections of ceramics, metal-work, &c.

The reports of the inspectors reveal that in spite of the number of years in which governmental control has been exercised remarkable defects still exist. In Mr. Cartlidge's report we read:—

> In one school (a comparatively new building) the sole accommodation for the modelling class was a small room not much larger than an ordinary store-cupboard, making it impossible for the students to work with comfort, and in the case of studies of large size rendering it difficult for them to see with accuracy both their exercises and the examples from which they were being copied. In another school the modelling and life classes shared one room, which was divided into two portions by a curtain. In this room the temperature necessary for the life class dried up and cracked the clay models whilst in progress, and the only means of obtaining water involved passing through the life class.
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> In several schools the day lighting is marred by the introduction of broad mullions into the windows, and in one notable case, where for the day lighting care had been taken to secure a north aspect, the lighting was provided by skylights inclined at an angle so nearly horizontal as to admit sunlight during the greater part of the day. In new buildings errors of this kind might be avoided by taking the advice of an experienced art master in the arrangement of suitable rooms and proper conditions of lighting. The evening lighting is sometimes defective from want of attention, the non-renewal of spent lamps in electric lights or of worn-out mantles where incandescent gas lighting is employed. There are also instances in which the provision of a new "service pipe" would probably put an end to the inadequacy of the gas lighting.
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> Perhaps the most potent source of inefficiency will be found in defective equipment. In the feeblest schools I have seen drawing copies, models and casts so dirty, mutilated or defaced, as to be absolutely misleading and worse than useless; some so effete as to indicate that need for renewal must have been

> apparent for years before my visit. Clumsy, unsuitable desks and other furniture and appliances are a constant drag upon the operations of some schools.
>
> The instances of imperfect equipment that impressed me most were in relation to the study of decorative design, which, in order to be prosecuted with distinct success, requires a liberal supply of casts, photographs, prints, diagrams, natural objects, text-books, &c. A notable case presented itself in a town possessing an important artistic industry. I there visited the home of one of the local designers, where he had provided for his own use, out of his own resources, a library of books of reference and a collection of photographs and other examples, of a magnitude more than twenty times larger than that I had seen in the school of art, in which a large class of students were studying design. This state of things seems difficult to realise, seeing that the school might draw upon the resources of the local taxation residue fund and a local rate for technical instruction.

The last-mentioned case is important, and we do not believe it is a solitary one. The students know where the most practical instruction is given, and for its sake they prefer to suffer some inconvenience. To accept the assistance of the books, models, &c., supplied by the public funds would also mean submission to official interference. It is more profitable to gain a mastery of design for which a price will be given by manufacturers than to possess medals and certificates without number. Whether the Board of Education will be able to compete with such schools as Mr. Cartlidge describes will soon be discovered. There is no reason why students who have a professional interest in art should not be allowed to attend private teachers if they wish, and to leave the schools of the Board to amateurs and others for whom art is only a pastime.

The inspector for North Lancashire calls attention to the number of new schools and laboratories which are rising up. The Manchester school is expected to cost a quarter of a million of money. On the other hand, disused weaving sheds, spinning factories, iron foundries, Nonconformist chapels, ancient post-offices and corn mills have been improvised into technical schools. The students must be enthusiastic who will be able to acquire information with such an environment. There is, however, a tendency in some towns to believe that with suitable schools the outlay on teaching can be diminished. It is no uncommon thing, says the inspector, to find that in order to eke out a sufficient income a teacher who is occupied during the whole of the day in a higher grade school is compelled to teach for four or even five evenings a week.

It is evident from the reports that masters are not so fettered by officialdom as formerly. The inspector in the North Yorkshire district says :—"The freedom afforded to teachers of drawing up their own schemes of instruction has resulted in the development of improved methods of teaching in many subjects. Many excellent syllabuses of work, both in theoretical and practical subjects, which reflect great credit upon the teachers, have been found very effective in securing the intelligent co-operation of the pupils, both in the classroom and the laboratory. One noticeable effect of the improvement in science teaching is that text-books are much less frequently used in elementary classes than formerly, and many teachers have given them up altogether, except in their advanced classes."

Mr. Redgrave, the senior chief inspector, recommends that the master of the School of Art should be consulted and made responsible for the general direction of the entire art teaching of a town, not only in the art classes but in the evening continuation schools and in the elementary schools. Most people would have no objection to that rule if they were assured of the character of the officials in Whitehall. But it is the unknown and invisible authorities who wrecked the Science and Art Department, and they may jeopardise the Board of Education unless their dealings with all connected with the schools are inspired by common sense.

There is much else in the Report which is worth attention if the necessary space were at our disposal. Evidently there is a desire to make education in the Government schools more effective. But there are other resources available for industrialism which can also be turned to account. "It has been suggested by the Local Government Board that it would be much to the public advantage if arrangements could be made whereby, on the request of the Board, officers of the Geological Survey should be sent to examine and report on any district where particulars might be required by that Department relating to water-supply, the pollution of springs, sites for burial-grounds or sewage-farms, or other subjects where precise geological information is necessary." An educational office is not the place to which a man of business would have recourse when he wanted information about the utilisation of the earth's surface. The business of the Geological Survey should be controlled by the Board of Trade. In any case information has been acquired by the officers, and it is remarkable how little it has been utilised, owing to the arrangements of the Science and Art Department, which so often set up obstacles to the diffusion of knowledge. Examples should be taken from America and other countries, where the labours of the official surveyors are not confined to the preparation of maps and the compilation of lists of fossils.

ARCHÆOLOGY IN IRELAND.

THE majority of Irishmen when they consider the subject of archæology look upon it as if it were no more than evidence of the greatness of their ancestors. The popular notion is that at one time Ireland was unrivalled for its wealth, its learning, its bravery and its artistic powers. There was so much "tall talk" about the days of old before her faithless sons had betrayed Erin, students of the past were disposed to believe that Irish archæology was entirely based on imagination. Fortunately there was too much real interest in the subject to allow it to be always ignored. When it was ascertained beyond all doubt that the Celtic language as spoken in Ireland, and as formerly used in commentaries on laws and customs, was allied to languages of the East, it then became evident that the Western Island presented no solitary instance of a people separated from other races, but presented a survival of tribes that at one time entered Europe as strangers and by degrees took possession of its best lands. Even if we suppose the race or races that settled in Ireland were driven westward by more powerful tribes, the distance they traversed only makes the connection between Ireland and Europe more varied than was possible with other tribes. It is not therefore too much to expect that evidence of the existence of the Celts should be found from the Eastern to the Western boundaries of the Continent.

As we have said, the narrow views taken by Irishmen about their archæology have prevented the subject of the relations between Irish work, manners and customs, and those of remote countries from being properly considered. But whenever an attempt is made by anyone who can be considered as an authority the result is remarkable. Take one case. A few years ago a work was published on the very early monasteries of the deserts of Egypt. It was written by the Rev. M. Jullien, a Jesuit priest of Cairo. It is not imaginative, like Ebers' "Homo Sum," but is entirely matter of fact, and derived from evidence, which is still forthcoming, of the early arrangements of those who fled from the world. The correspondence between the early Irish monasteries, or beehive houses, in the islands of Arran and on the Kerry coast and the Egyptian monastic establishments is so remarkable, there are grounds for concluding "that the type of the Irish monastic settlements and 'Desarts' must have been brought from the East; from Egypt, the home of the first 'Ascetics'—the 'Fathers of the Desert,' as they were called—some of whom came to Erin, and are commemorated on a slab at Clonmacnoise, and in the Litany of Ængus, the Culdee."

That conclusion appears in an article on "Boundary Crosses," by Mr. M. J. C. Buckley, in the last number of the "Journal of the Royal Society of Antiquaries of Ireland." Several means were adopted in various countries to define the limits of property in former ages. In Ireland, as religion was influential, types of the Celtic cross were set up, especially in connection with monastic estates. One cross, known as St. Tola's at Dysert O'Dea, co. Clare, is sculptured at the base with a representation of the fixing of a boundary mark. Four men are seen, who from their long tunics cannot be taken as laymen ; two of them hold a staff with a tau crutch head, the lower part of the staff being pointed in order that it may quickly enter the ground. The two other figures, as they are carrying pastoral staves, may be considered as bishops. The relief corresponds with a description which is to be found in the "Histoire de l'Abbaye de Morimond," by the Abbé Dubois, and which runs as follows :—

> The abbot, holding a wooden crutch or cross staff in his hand, went forward in front of the brothers, diggers, or wood-cutters, all reciting the Psalms. Having got to the place in the forest, or on the moorland, which had been given to them, the abbot planted his "cross" staff thereon, sprinkling the spot with holy water all around and taking possession thereof, in the name of Christ. He then, accompanied by the brethren, went round the territory. If it were a forest, the abbot first cut down a tree; if it were uncultivated land, he dug the first spade of its soil; his brethren immediately followed his example and thus commenced the first essays of agriculture on a regular system, not only in Ireland, but all through the countries of Europe, even to the confines of Asia.

On the same cross are also representations of Daniel in the Lions' Den and the Temptation in the Garden of Eden. The representations are very rude, and the apple trees are of a species which are unknown to fruit-growers. But what is remarkable is that in a church in Milan of the eighth century we see a similar conventionalism. As Mr. Ruskin long ago pointed out, Celtic artists preferred to employ an absurd symbol rather than open their eyes and imitate a living example. The patrons for whom they worked were no less indifferent to realism, and in that way forms were created which afterwards gained reverence from their age. The figure of Christ corresponds with one seen in a Syriac manuscript of 586. The Irish cross consequently can be considered as being allied to examples which are remote from the county Clare.

Another ancient work which belongs to the county Clare and is described in the Journal, is the "Clog an oir," or "Clog na neal," the bell shrine of Scattery Island. "Clog na neal" means the Bell of the Clouds, for it was supposed to have fallen from heaven, and "Clog an oir" referred to the supposed golden ornaments of the shrine. The bell-case was entrusted to the guardianship of a particular family, the O'Cahanes, from whom it passed to a branch family, the O'Keanes. The bell shrine was long regarded with awe, for there was a general belief "that it avenged any oath taken upon it in falsehood by striking with convulsions and death, or, at the least, with disfigurement and distortion of the face, the daring perjurer." The terror inspired by the bell can be judged from a story mentioned by the Rev. H. T Ellacombe in his work on "Bells of the Church." He says :—

> It was about the year 1834, a tenant farmer had his house broken into and robbed of 20*l.* He applied for the bell, as he suspected the robbery to have been committed by persons in the neighbourhood. It was brought with much ceremony to his house, and after Mass on the following Sunday was the time appointed for the whole parish to assemble to clear themselves from suspicion upon the bell. On the Saturday night preceding this ordeal, the farmer was frightened by hearing a crash at the window, which was broken in. He apprehended that his days were numbered, but after waiting some time in great fear all became quiet. On lighting a candle to see what had occurred he found, to his great astonishment, that his 20*l.*—even the identical notes, tied with the same string—had been thrust in through the broken pane, and were on the floor.

That so much power should be associated in the nineteenth century with a metal case 5 inches high and 2½ inches at base seems incredible, but it is the occult power attached to the bell which has gained it renown rather than the ornamentation.

The bell shrine of Scattery Island may not be of older date than the fourteenth century. It is not impossible that about the same period, or somewhat earlier, crannogs or lake dwellings were in use in some parts of the island. According to Dr. S. A. D'Arcy "there seems little doubt that the lake life of Ireland was in its prime during the twelfth century." The examples which have survived are invaluable, for, as he says, "of all the ancient structures the crannogs yield the richest harvest of knowledge as to the long-forgotten domestic habits of our country." The contents of two lake dwellings near Clones are described. No. 1 was strongly built on its western and north-western sides, which were exposed to gales. There was a hedge of perpendicular paling extending for 24 feet. In the foundations large logs of black oak were used, chopped into convenient lengths. Yew was also employed, and its condition recalled a passage in Cormac's "Instructions," where it is asked, "Oh, grandson of Con, what are the most lasting things in the world?" and the reply is "Grass, copper, yew." No mortise and tenon joints were found among the timbers. Several hearths of stiff clay mixed with stones existed, and it was evident from the ashes that wood fires were the rule. A great many flint objects were met with, chiefly scrapers; some were as small as five-eighths of an inch in length. A tool made of shale is supposed to have been used for scoring designs on leather. On the two faces of a fragment of soft slate is an interlaced design which is supposed by Dr. D'Arcy to have served as a pattern for imitation, but another authority supposes it possessed religious significance. Quern stones were abundant, and remains of objects in bronze, iron, lead, silver, tin, pottery, glass, bone, horn and leather are numerous.

We approach modern times in the paper on "Sixteenth-Century Notices of the Chapels and Crypts of the Church of the Holy Trinity, Dublin," by Mr. James Mills. The church is better known to-day as Christ Church Cathedral. Peter Lewys, who was precentor and proctor, and as such was entrusted with the control of building works, in Elizabeth's reign, kept a diary which is of great interest, especially as it suggests the arrangement of the building in his time. So many alterations have taken place, Lewys would not be likely to recognise the present building for that which was under his care. The choir has vanished as if it were never more than the baseless fabric of a vision. At the west end of the choir was a rood-loft, with the famous image which was removed in 1559. Above the loft was a screen on which scenes from the Passion were painted. The lady chapel was north of the choir, on the site now occupied by the chapter-rooms and robing-rooms. Lewys utilised it as a store for building materials. The nave was in such a condition as to be useless for the accommodation of the congregation, who had to attend in the choir. The south wall fell in 1562, and it was rebuilt by the Government, but there was no roof. Lewys's carpenters and slaters were employed for a year on the latter work. The crypt down to the seventeenth century was parcelled out for shops, stores and taverns. Apparently lessees were allowed much license in dealing with the old building, for in July, 1666, a lease was granted which related to a cellar under the church (except the portion demised to John Amos), another cellar under vestry adjoining said cellar to the east, the outstalls to north of these along the King's Pavement and east of the north stairs, with liberty to build over north stairs and break a door out through one of the windows of cellar under vestry.

An Order in Council prohibited the vaults under Christ Church or any house adjoining to be used as a tavern, tippling-house or tobacco shop. The abuse, however, crept in again after the Restoration, and was not finally put an end to until the next century.

There is much else in the Journal which is worth consideration. It is satisfactory to find that the indebtedness of modern archæologists to Petrie and O'Donovan is recognised. As a correspondent says :—"Men of a later generation seem to know so little of how much the study of Irish antiquities is indebted to Petrie and O'Donovan, as not to be aware of how different the departments were in which they chiefly distinguished themselves—Petrie in that of architecture and O'Donovan in that of historical and literary research. They revolutionised the study of those subjects and placed them on a firm and intelligible basis, each in his own special department. Antiquaries of a new generation have arisen who knew not Petrie and O'Donovan, but who are, nevertheless, unwittingly working on the foundations laid by them, and doing good work, too, in their day and generation." As long as a spirit of that kind prevails we may expect there will be a base for Irish archæology. The constant shifting of opinions, and the adoption of theories however opposed, has retarded inquiry, and will do so again unless conclusions like those of Petrie are allowed to have a regulatory influence.

SOCIETY OF ARCHITECTS.

THE opening meeting of the session 1900-1901 was held yesterday evening, the 22nd inst., when the following address was delivered by the president, Mr. T. Walter L. Emden :—

My thanks are again due to the Society for electing me unanimously for the fourth year to the presidential chair, and if only in gratitude for the honour given to me, I need not say I shall necessarily give my best attention to the work of the Society.

Whatever may be the position of the Society, and being the youngest of the English Societies, it must be looked upon as the junior Society, it undoubtedly has succeeded in making a position for itself, which is at all events unique as far as the architectural societies of England go. It is the first Society which has ever taken up as its principal object the improvement of the status of the architectural profession upon a solid and sensible basis. Whatever may be said of the work of the Institute or of any of the other architectural societies, and they have done much good work, they have not lent their aid to the principle of the registration of the profession and the system of compulsory education and examination before registration

It seems extraordinary that the oldest profession in the world should in this country, which is supposed to stand foremost in civilisation, never have been guarded by any scheme of education or examination, and no attempt made by the older societies to place their members on a level with the foreign branches of the profession. It seems hardly reasonable to suppose that there can be any real benefit obtained from the institution of the various architectural societies, when voluntary education and voluntary registration is the limit to which they attempt to elevate the profession. If the profession is to be recognised in the manner which its antiquity and standing demand and its power for good or evil for the public interests warrant, then certainly it ought not to be a profession so open, so uneducated and so easy of entry as the profession in England up to the present is. The education of its members cannot in any way deteriorate from their artistic ability, while a thorough knowledge of the profession and all its necessities in construction and sanitation cannot but add to the protection of the public and to the ennobling of the art of architecture, which we profess to practise.

The Society of Architects has attempted—and if it has not been able to do more it is for lack of support from the Institute and other Societies—to press forward the work of compulsory education and registration ; which should long ago have been made the chief aim of every architectural society in existence. That we may succeed in awakening the Institute to its obvious duty is the hope of every member of the Society, and if we do not succeed in this we must continue the work ourselves. That we have not succeeded sooner is to be accounted for solely by the opposition, active and passive, which is shown by the Institute, and by other Societies, influenced more or less by it. The eventual outcome will no doubt be, what common-sense points out as being absolutely necessary, that is that everyone who proposes or desires to enter the profession will be first compelled by Act of Parliament to show himself competent to do so.

I have no doubt that the jealousies and differences which always enter into every profession are accountable for much delay and opposition, but we must all hope that the time has now come when the Royal Institute might fairly and reasonably take the lead in this important matter ; indeed, I think I am justified in calling this the most vital question with which the profession can ever have to deal, and our experience in many of the greatest centres in the kingdom shows that it would have the most loyal support, not excepting our own.

I cannot but refer for a moment to the opposition undertaken by the Institute to the Bill in the last session of Parliament. That opposition was directed to the whole Bill because of some four clauses in it Well, whilst we ourselves in this Society think that some alterations and modifications to the Bill are necessary, we do not oppose the whole Bill because of this, and I cannot but believe that, when the opposition of the Institute has descended to this, that it must be near the point at which it will be ready to support the Bill, and endeavour to modify or amend the clauses so as to meet all the necessities of registration. I cannot at the same time but remark that I think it was ill-advised and undignified to oppose the whole Bill because of some of its clauses, and that the right course would have been to have stated fairly any real objections to the Bill, and have endeavoured to obtain alterations in committee to meet them.

The protection of the title of architect is one apparently of international importance, as we find at the late International Congress at Paris that a resolution was adopted in favour of restricting the practice of architecture to those provided with a proper Government certificate, placed within the reach of all by the diffusion of architectural education, and so protecting the public by preventing incompetent persons from entering the profession.

I would earnestly appeal to those who desire to see the status of the profession raised, and the door closed to incompetent men, to join this Society, and lend their aid to the work of registration which we have taken in hand.

To those architects who are holding back because, while they approve of the movement, they do not want to appear to oppose the Institute, or to identify themselves with the Society of Architects, I would suggest that they should subscribe their names to a committee having for its object the pressing forward of this matter of registration.

A good deal of controversy is at present proceeding as to what should be the proper training for an architect. Many think that the present system of pupilage and premiums should be replaced by a course of training in studio or college; but while the present method may be open to improvement, it seems to me that there cannot be much wrong with the system which has produced such distinguished men as those that now adorn the profession. The discipline and business habits now obtained by pupils who are trained in an office could not be obtained by attending classes or lectures alone. It is by a combination of the two that improvement can be effected. Every pupil's articles should contain a provision for him to attend regularly and at stated times classes and lectures provided at some recognised centres.

But I do not see much chance of this improvement until we have a scheme arranged by, say, the London University, with lectures, classes and professors similar to that which obtains on the Continent and in America. To multiply the existing so-called architectural training centres is only peddling and dabbling with the question, and will only increase the evils now existing, and will provide no sound and solid basis upon which to build a proper architectural college. If all the existing teaching agencies were to combine their forces, something satisfactory might be evolved.

Passing from this question, all-important as it is, I come to another matter which it seems to me has been dealt with somewhat late in the day. Not until it had grown into an evil of such dimensions as to make building operations almost prohibitive in many cases have the Institute attempted to deal with it ; even then, only after this Society had brought the matter into prominence by its petition to the Lord Chancellor and by ventilating the question at its meetings. The matter is one which can be so simply and fairly dealt with, as is the case in Scotland, that it is difficult to understand why it has not been more prominently brought before the public at an earlier date. However, the Society may be pleased that its efforts in this direction have met with the approval of the profession generally, and that the Institute have now come forward and formed a committee to deal with the question; we hope that it will press forward without delay until this much-needed reform is accomplished. The members of the Society must not, however, think that they have now done their duty and need not further press the question upon public attention. Those who grow old sometimes grow feeble, and it is not, therefore, to be taken for granted that because the Institute has put its shoulder to the wheel that it will press forward vigorously for this important alteration in the law of England. We must therefore on all occasions still continue to ventilate the subject, and in doing so we trust to help the endeavours of the Institute, and at the same time to make up for any lack of vigour which the elder Society may show in dealing with it.

The Society has much other work before it apart from its own immediate improvement, and I feel sure that the energy and self-sacrifice which has been practised by former Councils will be emulated in the new Council, and that the members of the Society may feel satisfied that its onward course of improvement and its work undertaken for the benefit of the architectural profession will in no way be stayed.

It has been suggested that the improvements and alterations made in London streets are not made upon any consistent plan, and that London should be laid out on a great comprehensive scheme irrespective of its present streets. Such a suggestion, of course, is absolutely impracticable in a busy business city of the magnitude of London to those who make a study of the problem.

Apart from the fact that it is probable that no agreement would ever be arrived at as to the best method of relaying London, the vast expense would tax even a nation's wealth, and it would be impossible for any municipality to carry it out. Attention is constantly drawn to the Ring Strasse of Vienna, the Unter den Linden of Berlin and the Boulevards of Paris, and the suggestion is more or less given to the minds of those who do not know, that these cities consist of a series of great streets and boulevards. Such is not the case, for practically outside the streets mentioned these cities consist of narrow irregular streets in an infinitely worse sanitary condition than those of London. I do not think the average of narrow streets in London, proportionate to its size, is anything like as high as they are in any of the cities mentioned.

Again, it would be well to remember that though London may not be as beautiful in some of its main streets as certain of the streets in continental cities, yet at the same time there is a picturesque feeling about many of the streets of London, which appeals I believe to the great body of the British public, and is appreciated by them for its home-like feeling in a way which no great straight new thoroughfare would.

I am of opinion that the London County Council in the question of improvements has decidedly of late years done well, and while I do not agree with all that is proposed, yet I do not think that the Council has carried out its schemes of improvement without giving full consideration to the effect upon London as a whole. I do not disagree with the idea which has been carried out for obtaining designs for the new street, but I think that the instructions were drawn with insufficient consideration.

The necessity in dealing with a business street like the Strand was that the designs should be made for the accommodation of business premises, not for a public building or monument. Great classic blocks may be beautiful, but in the Strand, if they are erected, they will be practically useless from a business point of view.

Buildings such as are proposed by the designs have not sufficient light for their use as ordinary offices and are absolutely unsuited and impossible for shops, and to erect them with three great floors, in a building of at least 80 feet in height, instead of seven is so uneconomical that if such restrictions are imposed it will not only hamper the letting of the land, but make it absolutely impossible to deal with it upon anything like commercial terms, or even prevent it being dealt with at all. The Strand is a street of shops and offices, and it would be quite out of reason to expect anyone to erect buildings in which it was utterly impossible to carry on a shop business, and to erect offices of dimensions suitable only to the principal rooms and halls of the Foreign Office.

Desirable as it is to see the corporations of our great cities consulting the profession on the elevations to its new streets and improvements, it must be remembered that such consultations can, on the one side, be only of use when the corporation clearly define the purposes for which the street is to be used, and will only be asked in the future if architects will mix some common-sense with their suggestions and design buildings not only architectural, but suitable for the purpose and position.

There are at the present moment in the provincial cities and boroughs, and particularly in London, many opportunities for the profession which should provide openings for proving from an artistic and constructive point of view that the profession is not deteriorating, but is making solid advance The many improvements and openings of good streets must necessarily provide sites for buildings; and the increasing necessity for wider streets must in itself give opportunity to the architect for a better illustration of his art than at present is obtained in the narrow thoroughfares of many of our cities.

There is another matter upon which I would like to treat, and which in my opinion, particularly in this crowded city of London, is of such immediate and vital importance that attention should be drawn to it, and that it should occupy a prominent position in the work which the new municipalities should take immediately in hand. It is not perhaps, strictly speaking, an architectural question, though it is certainly akin to it. I am alluding to the question of subways to meet the congested and ever-increasing volume of passenger and vehicular traffic which crowds and makes our public streets impassable, and the constant pulling up of the thoroughfares for pipes, wires, &c., which make so serious a loss to many and inconvenience to all.

I am the more induced to speak upon this subject because it is now some years past since I commenced to ventilate the question by the kindly aid of the press, and while much attention was then given to it, nothing has been done which substantially deals with the question.

I have attempted by proposing resolutions in the London County Council to bring the question into a prominent position, and into what might be called the region of practical politics; so far, however, little, as I have said, has been done. We certainly have subways in the shape of a small tunnel down some of the new streets, but as a system or to be of any material use they are practically non-existent.

It always appears to me that there is a vast waste of useful space in the ground under the streets and roadways. The pipes and tubes and sewers which are under them, scattered about all over the surface, would occupy an extremely small space if all were brought together into a convenient subway; it cannot be argued that it is necessary for them to occupy the whole surface of the road, or to occupy it even to such an extent as to prevent or interfere with any thorough scheme of subways.

The method of dealing with subways seems to me to be by excavating the whole of the ground between the houses on either side of the road to a sufficient depth and then arching over to the road level. Such space as now is allowed for vaults would still be allowed and belong to the houses on each side of the road, and there would be a still further amount of cellarage which could be let at fairly remunerative rents, particularly as the work of construction would be carried out at the low rate of interest which is paid by a public body

There would remain space for one or two side-walks (according to the width of the street) down which the public could pass, much to its personal safety and convenience, particularly in crowded thoroughfares. There is also no reason why, where space admits, provision should not be made for a special track for cyclists. The middle portion of the subway would be retained as a tunnel, in which all the various pipes and tubes belonging to water, gas, electric, hydraulic and other companies could be laid. Under it the sewer, with the necessary manholes, &c., for entering.

A suggested construction for subways can be seen in the drawings made by Mr. Ventris, the surveyor and engineer for the late Strand District Board, and which are exhibited on the walls of the room. There may be, and necessarily would be, difficulties in carrying such a scheme of subways out, but this would be compensated for by the many advantages which would be gained to the public when they were once constructed.

Apart from those advantages which are obvious from the description I have already given, I would point out that there being in the arch a solid concrete foundation upon which the road and pavements would be laid, there would be no such thing as the sinking and giving way of portions of the road surface, and as a further consequence, and because it would not be constantly torn up, the road would wear more evenly and last for a much longer period. Another advantage would be in the fact that whenever it became necessary to relay the road, the inconvenience would be extremely slight, inasmuch as it would merely mean the taking up of the old cubes or blocks and the immediate relaying of the new, a matter which could be performed in small sections and with the smallest amount of inconvenience to the traffic and to the business carried on by the occupants of the street At present the loss to the shopkeepers and owners of businesses on roads which are constantly up and partially, if not wholly, closed is a very serious matter of ever-growing importance. I do not suggest that the system of subways in a great city like London could be carried out in every street at once, but certainly the leading thoroughfares might reasonably be dealt with without delay.

As a matter of fact, the saving of the very expensive methods which have now to be adopted in not only laying but in repairing tubes and wires under the ground would be saved, and so the great monopolies benefited to such an extent as to make it well worth their while to pay a fair rental for the use of the subway. The cost of attention to their tubes, &c., would be merely nominal to the various companies as compared with what it is at present, while they could deal with them at once in a subway instead of having the delays, risks and expense of taking up the street

It is the case that in some of the leading thoroughfares there are, under the surface of the road, over thirty different pipes and tubes of which only a portion are what might be called alive or in use, as, rather than take up an old pipe, often enough it is abandoned and left under the road and a new tube or main laid down.

To sum up the advantages in constructing a comprehensive scheme of subways there is not only the fact that the probable rentals obtained from the various companies occupying them with their tubes, pipes, and from the cellarage would be sufficient to pay a good interest on the outlay, but the roads would last longer, the public would be rarely inconvenienced, if at all, by any taking up and relaying of roads, and all the powers of the numerous companies so harassing and difficult for a public authority to deal with, and by which they can and do constantly pull roads up would be done away with, and the expense incidental to the superintendence, &c., of all these pullings up and relayings would be saved to the public authority, and hence to the public rates.

Lastly, but not least, the inconvenience to the public and the loss to business would become things of the past. For these reasons I believe this is one of the subjects which should be strongly commended to the attention not only of the London County Council as the central authority, but also to the new municipalities, as while rates may increase from many causes under the new authority, by this corresponding advantages would be given, even if a valuable source of income is not provided, as I believe would be the case.

I trust in calling your attention to this subject I am not going too far outside my province as the president of your Society; but it is a matter of serious importance to the public, and so closely allied to the work we have to do, that I hope I may be forgiven the transgression if it is one.

In conclusion, I would express my hope that the Society will continue its prosperous career, and that its sphere of usefulness will be, by the energy of its members and those whom we hope will join, considerably increased.

I particularly wish to express to the members of the Society the great debt they are under for the successful working, to the honorary secretary, Mr. Ellis Marsland. His time and energy have been to the fullest extent at the disposal of the Council and its work, and in no way has he allowed questions of personal convenience to stand in the way of his work for the Society.

To Mr. C. McArthur Butler, the secretary of the Society, the thanks of the members are due, and I believe I am justified in saying that the Council feel that since Mr. McArthur Butler has performed the duties of secretary the work has been efficiently and well done.

ST. AUGUSTINE'S ABBEY FIELD.

THE subscribers towards the purchase of the above ground may be interested to know that the trustees have begun a systematic excavation of the site, under the direction and personal supervision of Mr. W. H St. John Hope and Canon Routledge. According to the latter, in the first place were uncovered the remains of the early Saxon chapel of St Pancras, the vestiges of the pigsty into which the chancel had been converted having been removed, and the cottage walls (encumbering the nave) having been cleared away, with the consent of the Kent and Canterbury Hospital. The area was then excavated to the floor, which was found to be covered in places by fallen masses of Saxon walling. These masses exhibit some interesting data as to the architectural character of the chapel, and have therefore been left as found to tell their story. One Roman pillar is *in situ*, and portions of two others have been discovered among the débris. The plan, as now completely revealed, is a valuable addition to the few early Saxon plans that have been recovered or come down to us. Some of the tiles, embedded in salmon-coloured mortar, have evidently been taken from an earlier Roman building, as well as the pillars that have been mentioned above.

A fuller description will be given hereafter of various other interesting features that have been laid bare, and it is hoped that a discussion will be held on them by the Society of Antiquaries during their winter session.

Operations on the site of the great abbey church of St. Peter and St. Paul, which is known to cover the sites of two other early Saxon churches—viz. that built by King Ethelbert for St. Augustine, and the chapel of Our Lady built by Eadbald—were only tentative, partly on account of the approach of winter, and partly owing to the impossibility of removing at present the huge mass of earth, to the depth of several feet, which was deposited twenty years ago on the site of the presbytery If the Saxon churches and many other interesting ruins are to be explored, it is absolutely necessary to remove this superincumbent mass of earth, but it will be tedious and expensive, and will involve a great expenditure of time and labour.

Despite all hindrances, the north end of the transept was opened out, with remains of an apsidal chapel to the east. Certain walls at the east end of the church have also been partly unearthed, but the work here is at present of too fragmentary a character for any positive statement to be made. Among the rubbish there were found many gaily painted stones, together with carved and gilded Purbeck marble fragments, and bits of porphyry and serpentine mosaic, belonging (no doubt) to some rich shrine, possibly that of St. Augustine. Other buildings have been partly traced, including the chapter-house, which was over 80 feet long and nearly 40 feet wide, also walls of a large hall running eastwards, probably the infirmary.

THE NATIONAL PORTRAIT GALLERY.

THE Trustees of the National Portrait Gallery have received from Mr. G. F. Watts, R.A, a portrait painted by him of the late Right Hon. Friedrich Max Müller, which has been accepted by them as part of Mr. Watts's original gift to the nation.

The Trustees have also accepted the following portraits offered as gifts to the gallery:—Sir Charles Barry, R A, architect of the Houses of Parliament, painted by J. P Knight, R A., and presented by his son, the Right Rev. Alfred Barry, late Bishop of Sydney; William Buckland, D D, Dean of Westminster, the eminent geologist, painted by T. Phillips, R A., and presented by his daughter, Mrs Bompas, and Mr George Cox Bompas; Sir Thomas Chaloner, diplomatist and author in the reign of Elizabeth, an old copy from a painting by Antonio Moro, presented by Mr E. A. Maund; Sir Humphry Davy, P R S, a relief portrait, modelled by A. Bruce Joy, presented by J Wilcox Edge, Esq The following portraits have been purchased by the Trustees for the gallery:—Edward George Earle Lytton-Bulwer, first Lord Lytton, the novelist, painted by H W. Pickersgill, R A.; Francis Wheatley, R.A, painted by himself; Thomas Shadwell, poet laureate, a small portrait attributed to Mrs. Beale.

The Trustees of the National Portrait Gallery have also acquired by purchase from the estate of the late Mrs. Prudentia Sarah Jefferson Lonsdale, a portrait of Percy Bysshe Shelley, the poet, painted by G. Clint, R A., and bequeathed in 1897 by Mrs Lonsdale to the National Portrait Gallery.

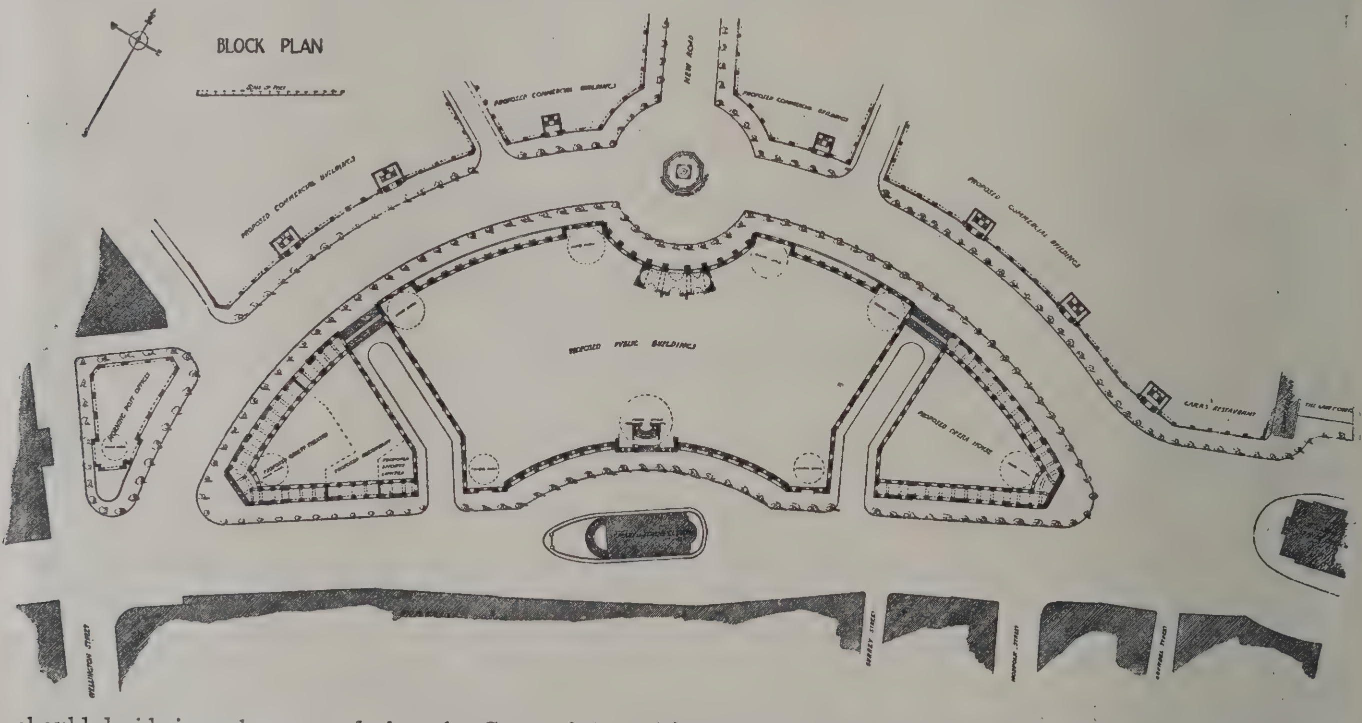
As the Trustees are already in possession of the original portrait of Percy Bysshe Shelley, painted by Miss Amelia Curran, which was bequeathed to the National Portrait Gallery in 1899 by Jane, Lady Shelley, they have thus been able to secure for the nation the only portraits of the poet at present known to exist, except a miniature representing him as a child. The portrait by Miss Curran was painted from life at Rome in 1819, but never finished. So unsatisfactory did it seem that Miss Curran was once on the point of burning it. With the exception of the miniature, this is the only existing portrait of Shelley that is known to have been taken from the life The portrait by G. Clint, R.A., was painted for Shelley's friend, Jane Williams, widow of Captain Edward Elliker Williams, who was drowned with the poet. It descended from her to her daughter, by her second marriage with Thomas Jefferson Hogg, the late Mrs. Lonsdale, who bequeathed it to the National Portrait Gallery. It is taken directly from the portrait by Miss Curran, but has the advantage of having been corrected by personal acquaintances, and, as it is also stated, from a water-colour portrait by Captain Williams, though this is not known to exist. A lithograph from Clint's portrait by Vinter was reproduced as the frontispiece to Trelawney's "Records of Shelley, Byron and the Author," published in 1878, this portrait having, in the opinion of Trelawney himself, much greater resemblance to Shelley than the unfinished sketch by Miss Curran.

EGYPTIAN HIEROGLYPHICS.

THE first lecture of a course on Egyptian hieroglyphics was delivered on Nov. 12 at Owens College, Manchester, by Mr. F. H. Griffiths. The Egyptian system, he said, was confined to the Nile Valley, and with one exception was not adopted by any other nation. Egypt had been brought into close contact with other nations, but the correspondence with Assyria which was found at Tel-el-Amarna was carried on in cuneiform characters, and when in later dynasties Egypt had intercourse with the Phœnicians the alphabetical system of the latter was not affected by the contact. Around the Eastern Mediterranean there was almost a ring of countries possessing a written language—Syria, the hill lands around Elam, the country of the Euphrates, Cyprus and Crete—but the method was quite unlike that of Egypt. Crete, as Mr. Arthur Evans had recently demonstrated, had a system of writing which went back to at least 1600 B.C. Outside this group, with the exception perhaps of China, there was no written language. The origin of writing probably lay in the attempt to preserve a record of a great event, such as a battle A picture was drawn, but this was unsatisfactory without explanation, and the desire grew for something more explicit. The picture was gradually broken up, and single features, such as a helmet, were distinguished to mark individuals. In this way a system grew up which served as a notation of events. The Egyptians spelt out their language word by word, and never resorted to mere pictures From the historic dynasties onwards, at any rate, every word had its sign or group of signs. The cuneiform system was native to the Mesopotamian Valley, but the people who used it were of different races. The race which originated the cuneiform characters was Turanian, but the script and the sounds which it denoted were adopted by the Semitic race—the Babylonians—who followed, to express their own quite different language. The Egyptian characters were never treated in this way, except for a limited period about 500 B C., when an Ethiopian race which had overrun the country adapted the hieroglyphic phonetics to their own language. Very little of their writing had been deciphered. It had been suggested that Egyptian hieroglyphics were the origin of the Phœnician alphabet, but there was absolutely no proof of this, and as there were other systems in use among neighbours of the Phœnicians it was unsafe to generalise. The original idea might have been borrowed by one nation from another, and the Egyptian system might be one outgrowth of this. A curious feature in the development of Egyptian writing was that alphabetic letters were used as early as the first dynasty, and in the fourth dynasty words were fully written out. If the Egyptians had carried out this beginning, and written all words by alphabetic letters with a picture sign afterwards as a determinative, their system would have ruled and would easily have displaced the clumsy cuneiform. They would then have had twenty-four letters plus picture signs, but instead they went backward rather than forward, and ended by having about 2,000 signs as well as pictures. The lecturer concluded by giving some examples of the way in which Egyptian words were built up.

NOTES AND COMMENTS.

The decision in the Court of Appeal, although it was rather negative in character, in the case Fergusson *v.* Green, is likely to have some effect in dealing with the Workmen's Compensation Act. The applicant was a working plasterer, whose employers had taken a contract for the plastering of some cottages. He improvised a platform consisting of a pair of trestles with loose boards. On the platform he placed a table on which to manipulate the plaster. As the table was unsteady he tried to mend it, and while doing so a nail flew into his eye. The County Court judge appointed an arbitrator to hear the evidence. He declined to make an award in favour of the applicant on the ground that the improvised platform was not a scaffolding within the meaning of Section VII. of the Act. But in case his decision should be held to be wrong he fixed a certain sum as compensation, and left the question whether he was right or wrong to the consideration of the County Court judge. The judge was of opinion that the question whether the trestles and board constituted a scaffolding was not merely a question of fact but of law and fact, and he decided that the platform was a scaffolding within the meaning of the Act. In the Court of Appeal the Master of the Rolls said that hitherto the Court of Appeal had decided not to give any definition in law of the word "scaffolding." It was always considered that the question was one of fact, which the arbitrator should decide in each case, and that the Court of Appeal would only consider questions of law. If there was any evidence to support the arbitrator's finding on a question of fact, the County Court judge could not properly overrule it. Lord Justice Collins said that the platform or arrangement might be a scaffolding, and any arbitrator who took the contrary view would be misdirecting himself. It would be difficult to see on what grounds the arbitrator based his decision, but it was his duty to decide whether the platform was a scaffolding or not. The arbitrator's award was therefore allowed to stand, although it is contrary to the finding in Maude *v.* Brook, where a similar arrangement was declared to be a scaffolding. It certainly is time that the definitions of the Act should be amended.


BLOCK PLAN
NEW ROAD
PROPOSED COMMERCIAL BUILDINGS
PROPOSED COMMERCIAL BUILDINGS
PROPOSED COMMERCIAL BUILDINGS
PROPOSED COMMERCIAL BUILDINGS
PROPOSED PUBLIC BUILDINGS
PROPOSED OPERA HOUSE
PROPOSED POST OFFICE
WELLINGTON STREET
SURREY STREET
NORFOLK STREET
ARUNDEL STREET

The London County Council are compelled to be the owners of so much house property it is only reasonable that a special department should be proposed to be created. According to the report of the general purposes committee the head of it is to be known as the housing manager, and to receive a salary of 800*l.* a year. His duties are to be as follows:—(1) To be responsible for the charge and control of all estates and buildings laid out and erected by the Council for the housing of the working classes, including all lettings, small repairs and the collection of rents, subject to the supervision of the comptroller as at present. (2) To advise the committee as to the most suitable class of buildings to be erected, and generally on the whole question of dealing with the housing of the working classes. (3) To advise as to the rents ruling in the neighbourhood of any particular scheme, and as to the amount which should be set apart annually for necessary repairs, and generally to prepare the estimates as to the financial effect after obtaining all necessary information from the various departments. (4) To search for and advise as to sites suitable for the erection of working-class dwellings. The valuation of land and the acquisition of property for the houses will continue to be among the duties of the Council's valuer, and the designs for new buildings will as heretofore be prepared in the department of the supervising architect. The recommendation was unanimously adopted on Tuesday.

It has often been remarked that critics, or perhaps we ought to say law-givers, in art or literature rarely produce works which are on a level with the canons they announce. One remarkable case was brought before the last assembly of the French Académie des Beaux-Arts. The Comte Delaborde, who for a great number of years was principal secretary, was more than an official lover of the arts. He painted many excellent pictures, but he was not satisfied with them. The reason was that M. Delaborde had had a variety of influences, and instead of following his own genius he was always deferring to one or other of them. At one time Ingres appeared to be irresistible with him, at another time it was Delaroche; sometimes the impetuous Delacroix was supplanted by the placid Fra Angelico. When he abandoned painting for writing he laboured under a similar difficulty. As a member of the Institut he was bound to be reverential towards the French classical writers, and his apprehensions that he might employ a sentence which would not meet with the approval of the earlier members of the Académie, deprived his own work of much of the vitality which is of more importance than correctness. M. Delaborde rarely allowed his own individuality to have sway, and consequently, although only a short time has elapsed since he departed from the Hôtel Mazarin, his work is no longer regarded as the result of creative force but as the product of an official duty.

ILLUSTRATIONS.

THE LONDON COUNTY COUNCIL HOLBORN AND STRAND IMPROVEMENT.—DESIGN NO. 20.

CHESTER "ROWS" AND THE STRAND IMPROVEMENT.

THE proposal of Sir Frederick Bramwell, C.E., to introduce an arrangement resembling the "Rows" of Chester n the new street between the Strand and Holborn has caused several letters to be sent to the *Times*. Mr. Frederic Harrison wrote in opposition not only to the Chester principle, but also objected to the County Council imposing novel ideas on purchasers or lessees of the sites. Mr. W. Emerson, in reply, said :—

It is because the County Council, the most powerful municipal body in the world, backed by Acts of Parliament, are so given to take only the sordid financial view of things that they consider themselves unable to insist on certain principles of design being carried out on their land, and are unable to mpose conditions of design upon their lessees. Other great andowners of less power in this Metropolis are able to do so. It is by arguments like Mr. Harrison's having undue weight that we have been saddled with the horrors of Knightsbridge, and the nightmares of Charing Cross Road and Shaftesbury Avenue.

Any schemes or designs that may be prepared for metropolitan improvements, whether from the Strand to Holborn or elsewhere, unless the general principles and æsthetic lines of such designs can be imposed on the lessees and building owners, are but futile and abortive efforts, and waste of archiects' time. Why should control over æsthetic design be more difficult to enforce in Imperial or metropolitan improvements han in constructional and sanitary matters? We seem to need a Haussmann—but minus a passion for uniformity of design in our buildings—to lay down new London on a large and Imperial scale, and to insist on all new buildings conforming to such lines, not only as regards the proper widths of streets, but also as to architecture But such control would have to be in he hands of committees of men of acknowledged taste and artistic education, for, as an eminent Royal Academician put it o me the other day, "such matters could not be left to the views of any one blockhead who might happen to rule the roost at the time"

I am not attempting to argue in favour of Sir Frederick Bramwell's suggestion as to the Chester plan. I think it impracticable for many reasons. One or two are—that, were here bridges over side streets, as he suggests, they would have o be lofty enough to allow of the largest and most heavily aden vans or waggons passing under them, and they should be evel with the walk over the ground-floor shops. This would nvolve some thirty-five or forty steps up to the covered footpaths, exceedingly inconvenient for taking goods to and from vehicles on the roads, and also for pedestrians. The shops at Chester, with footpaths over them, are of no great height. Also, the superstructure shown on his sketch overhanging the upper path, with no apparent support, would be constructionally objectionable, and also ugly.

All the same the comfort of pedestrians in the rebuilding of London should be more considered than it is at present. Proection ought to be provided from wet and snow, and the heat of the sun during periods like those experienced in the last few summers.

Mr. Harrison wrote in answer :—The Council have to recoup themselves in disposing of lots to some three or four millions sterling. On these lots will be placed theatres, halls, banks, warehouses, chambers, restaurants and shops. Are all hese to be forced to adapt themselves to Sir Frederick's ngenious, untried, and possibly picturesque scheme? I confess I fear, if it be tried, the ratepayers will lose half their money. The President, in his grand manner, calls this "the sordid financial view of things." Architects, I believe, often say this when their original estimates are doubled. But the President forgets that the County Council have not the lordly freedom enjoyed by the Dukes of Westminster, Portland or Bedford. They are a public body, strictly limited by Acts of Parliament, with every shilling of their expenditure audited by he Treasury, and narrowly watched by the ratepayers. They can only act as Parliament and their constituents permit. To rebuild on the new street, as some enthusiasts advise them, would cost 40 millions sterling. Who will vote the money? Even to impose the rigid conditions suggested by Sir Frederick Bramwell would risk, and certainly postpone, the recovery of he four millions already sanctioned by Parliament. I offer no opinion as to the designs, nor do I offer objection to an arcade or covered footway. I only ask the Council to count the cost and the risk involved in Sir Frederick Bramwell's particular scheme.

Is it not bad tactics as well as bad taste for the President of the Royal Institute to insult the County Council with which hose he represents have so many relations? He surely knows that the Council are not responsible for Knightsbridge, Charing Cross Road and Shaftesbury Avenue. To vapour about our needing a new Haussmann "to lay down new London on a large and Imperial scale," and to call the chairmen of the Council "any one blockhead," gives us a curious measure of the good sense and courtesy approved in the Royal Institute. I have no pretension to speak on behalf of the London County Council. But the experience I had when a member of it has taught me how difficult are its tasks, owing partly to the "sordid financial view of things" imposed on it by Parliament, Government and the ratepayers, partly to the squabbles and jealousies of "the profession" and the fads of æsthetic amateurs

Mr. Emerson in a second letter offers further explanation of the position he assumed :—

My generalisation and letter were intended as a protest against the principle suggested, that a powerful body as landowners cannot impose on building lessees conditions of architectural design—apart from the question as to whether Sir Frederick Bramwell's idea was a good one or not, though I pointed out I thought it impracticable.

Mr. Harrison was under a misapprehension in supposing that the County Council, after having obtained designs for the Strand to Holborn improvement, undertook to impose conditions of design on their lessees.

The important points in the proceedings in reference to the conditions issued in obtaining these designs, which our Institute protested against, were that it was plainly stated to us that it could not be insisted on that lessees should build in accordance with a certain approved scheme, or guaranteed that the architect whose design was selected should even be employed to prepare the detailed drawings. I most indignantly protest against the words I quoted being applied to any chairmen of the London County Council. They were quite impersonal.

In all my public utterances on the subject of æsthetic control of public buildings I have urged the organisation of a national, not a municipal, ministry of fine arts, who should be guided by a committee of artists and architects.

The term "blockhead" was applied to an imaginary official head of such an imaginary department, and it is absurd to suppose that I intended it to be applied in the manner that Mr. Harrison insinuates. I had no such intention. We have had in former years experiences of men in authority of strong will, but devoid of taste—in no way connected with county councils —who have dealt with public buildings and town arrangements in ways very detrimental to architectural effect. A committee so constituted might prevent the recurrence of such things.

No doubt "sordid financial" views are sometimes imposed upon the London County Council by various bodies and persons, but that is no reason why such a powerful body should be governed by such considerations or should not be able to rise above them.

Mr. Walter Emden, who should be an authority on the subject, writes :—Referring to Sir Frederick Bramwell's suggestion as to the second tier of shops similar to the Cheshire rows, I am afraid that few in London would approve the suggestion on two grounds—one, its unsuitability in buildings of six or seven storeys in height, the other reason being the difficulty for police supervision and local board cleansing and management. In Cheshire, with picturesque old English houses, it no doubt adds to the effect of the buildings and would not look out of place, but it is very different in a street which is to be 100 feet or more in breadth, and in which the houses will be some 80 feet in height. It needs no imagination to understand what the difficulties would be with regard to police supervision, particularly on dark and foggy nights, and I think these reasons are sufficient to mark the suggestion, however good it may be, as being impracticable

I cannot agree with some remarks made by others of your correspondents as to the dealings of the London County Council with regard to its property. The Council does exercise supervision over the elevations, and I think I am quite correct in saying as much supervision at least as is given by almost every other owner of any large estate in London or elsewhere. I do not think it can be said fairly that the London County Council does not manage its property well, and it must be remembered that the County Council has the property in trust, and necessarily therefore must manage it for the benefit of the ratepayers.

Though I speak of my own profession I do say it is very necessary for architects to mingle some common sense with the suggestions which are made as to elevations in a business city and in the centre of the busiest part; it is unreasonable to advise the erection of monuments where business premises are required. In order to build offices which would be suitable for business purposes and which would pay, the floors would have to be of practically a regular height, and the window openings at regular intervals; and similar rules apply, more or less, to the shops or business premises on the ground floor. Under these circumstances it must be seen at once the impossibility of giving free scope to architectural design. The plan, that is, the necessities of the building, must govern the elevation.

What is absolutely necessary in the designing of the new street is that, while good elevations must be insisted upon, the purpose for which the street will be used must not be lost sight of. I do not suggest that the Council should not give every possible consideration to the architectural effect of the street, even at some sacrifice; but to put conditions upon those who may be desirous of taking the property which will be absolutely preventive of their making the best of the land for any reasonable business purpose would make it impossible to let the land, and would not be fair to the ratepayers.

As I said before, London is a business city, and this is the centre of it, and it is therefore quite out of the question to treat the street purely as a monument and with a view to its architectural effect alone.

One of the anonymous correspondents writes:—

It is devoutly to be hoped that pause may be given to Sir Frederick Bramwell's proposals for the planning of the new street to debouch on the Strand. To his suggestions there are many objections which he has apparently overlooked. He has written under the impression that at Chester there are two tiers of shops—one at the road level, the other on that of the "rows" above. This is not really the case. The so-called shops at the road level are hardly shops at all. A London shopkeeper would stigmatise them as mere cellars or cupboards. They are but 5 feet or 6 feet in height, and in many cases windowless. Thus the level of the "rows" is but little above that of the road, and can be reached by a very short flight of steps.

As the shops contemplated by Sir F. Bramwell for the road level would be not less than 20 feet high—to suit the requirements of modern shop-business in London—the rise of steps to reach the level of the upper range of shops would be utterly out of comparison with those which Sir Frederick refers to at Chester. To avoid the great encroachment which the emergence of such steps would make on the upper footway the steps would be necessarily spiral, and these, planned as they must be on a short radius, would be in the highest degree objectionable.

As regards the picturesqueness of the Chester rows it can hardly be maintained that the effects associated with rustic gabled frontages and half-timber construction, locally and historically interesting in a country town, may consistently be adopted for a first-class thoroughfare in an Imperial city which demands a dignified architectural character. Sir F. Bramwell's plan would, too, involve a prodigious waste of space by the setting back of the superstructure, which at Chester is avoided at the cost of light and air in the shops of the "rows."

But Sir Frederick arrests the setting back of the building at a point overhanging the upper "row" of shops—this in order to provide a covered way by a partially-developed canopy against wet weather. This restricted protection would at times cause the greatest confusion and inconvenience from overcrowding under stress of weather, when pedestrians from the uncovered footway of the street would add their numbers to those of the upper level, despite its difficulty of access. At night, too, such covered way would, in dry as well as wet weather, become the favoured promenade of characters against whom it is necessary in the early hours to close the Burlington Arcade. Under like provocation, which had become a public scandal—as well as considerations of diminished light and air to the shops—the old colonnade of the Regent's Quadrant was removed to the satisfaction of everybody, although a feature of considerable architectural value was thus sacrificed.

Sir Martin Conway claims to have offered a similar suggestion a few years ago. Messrs. C. & W. Henman say that their father, the late Charles Henman, exhibited in 1855 in the Paris International Exhibition a design showing shops at the first-floor level with a covered footpath fronting them, connected by bridges at the intersection of the side streets. In the Exhibition of 1862 a design by him was seen for embanking the Thames, showing a roadway (at the level of that now in existence) having warehouses along its land side, above which is a second roadway at the level of the bridges, and the shops bordering this have covered footpaths in front of them.

Mr. C. Forster Hayward, F.S.A., also calls attention to a series of plans, elevations, sections and large perspective view at the International Exhibition of 1862. Designed by himself as applicable to the then projected Thames Embankment between Hungerford and Waterloo Bridges, which portion of the new Embankment seemed to lend itself specially to such a form of street architecture—though equally applicable to other parts—this scheme was devised to arrange and adjust the varying levels of the Strand, the Savoy, the Adelphi Terrace and Somerset House Terrace, and there were to be no staircases and connections by bridges over intervening streets.

In the end, however, gardens and open spaces superseded the projected street frontages, much to the general advantage. But the designs remain to show how some such excellent suggestions as Sir F. Bramwell now brings forward were practically considered and worked out in detail and publicly exhibited so many years ago, and can now be seen, if Sir F. Bramwell or others should desire.

Of course modifications would be needed in any special application of the principle, and existing variations can be observed at Berne and Thun in Switzerland and elsewhere.

BIRMINGHAM ARCHÆOLOGICAL SOCIETY.

A MEETING of the members of the Birmingham Archæological Society was held in the council-room of the Birmingham and Midland Institute on the 14th inst., Mr. J. A. Cossins presiding. A paper entitled "Some Notes on Domesday Book, especially that part of it which relates to the County of Warwick," was contributed by Mr. Benjamin Walker. In an interesting manner he described how the book was compiled, and by the aid of a lantern view showed a reproduction of one of the pages of the book having special reference to the immediate district around Birmingham. The compilation of the book was determined upon by King William I., in 1085, and despite the enormous difficulties which had to be encountered by its compilers was finished in eight months. No such survey had ever before been undertaken in this country, and the king's object in commanding it was probably that he might be able to properly apportion any taxes he desired to levy and to calculate beforehand the amount such taxation would produce. The Domesday Book was extremely valuable for the light it threw upon contemporary history, the topography of the country and the manners and customs of the people. The lecturer subsequently showed a map of Warwickshire representing the county at the time the Domesday Book was compiled, which he said he had constructed by the aid of information obtained from the book. The lecture was listened to with close attention, and at the close a hearty vote of thanks was accorded to Mr. Walker.

BRITISH SCHOOL IN ROME.

THE managing committee announce that the school will open in December. The director, Mr. G. Rushforth, is on his way to Rome. Communications to him should be addressed "Mr. G. McN. Rushforth, the British Embassy, Rome." Intending students are requested to apply to Professor Pelham, Trinity College, Oxford, from whom all particulars as to admission, &c., can be obtained. The school is intended to promote the study, not only of Classical history and archæology, but of Mediæval history, art and literature. The director will be happy to explain the principal recent discoveries relating to ancient and Mediæval Rome to any University graduates and members of the teaching staff of public schools who may be visiting Rome during the Christmas or Easter vacations. Those who wish to avail themselves of this offer are requested to communicate with the director as soon as possible. Should there be any expenses connected with the lectures, a small fee may be asked for.

FRENCH ART SCHOOLS.

A REPORT on the following art schools:—(1) Ecole des Arts Décoratifs; (2) School attached to the National Manufactory of Porcelain at Sèvres; (3) Ecole des Beaux-Arts; (4) School attached to the National Manufactory of Gobelins Tapestries has been prepared by Sir W. Abney and Mr. A. S. Cole. They say:—

The particular points which struck us in respect of these schools were:—The frequent assembling of some or all of the professors as councils of advice or juries in regard to the work to be done and done by the students, the part-time as distinct from a whole-time employment of the professors and assistant professors engaged to give instruction, the allotment of special times to special kinds of instruction, the tests or competitions which candidates have to undergo before they are admitted to a course of instruction or are promoted from it to a higher course, the careful records kept of the students' marks and works from month to month or quarter to quarter, in accordance with which the position of the student in the school is determined at the commencement of each year; finally, the manner in which the organisation and administration under the Minister of all that appertains to fine art in France is subject to the direct influence of various councils composed of the highest experts, with whom are associated a few members of the administrative staff of the Ministry, each of such councils having charge of a particular division of fine arts, the divisions being:—(1) Public buildings, (2) instruction, (3) museums and exhibitions, (4) preservation of historical monuments, (5) theatres and music, (6) national or state manufactories.

Ecole des Arts Décoratifs.

The Ecole des Arts Décoratifs is under the administration of a director appointed by the Minister of Public Instruction and Fine Arts He presides at the meetings of the professors of the school.

The school is under the surveillance of a superior council, presided over by the Director of the Fine Arts Department of the Ministry of Public Instruction and Fine Arts

The appointments to posts on the administrative staff of the Director of the school are recommended by him to the Director of the Fine Arts Department, who submits them to the Minister.

The professors of the school meet every month, and more frequently under the presidency of the director of the school. They deliberate upon the questions brought to their notice in respect of the progress of studies, methods of instruction, syllabuses of the school competitions and the submission of the names of students deserving of the awards offered by the State. The assembly of professors, to the number of twenty-six, elects its vice-president and secretary, whose nominations are submitted to the Minister for approval.

The school is open from 8.30 A.M. to 10.45, and from 1 P.M to 4 P.M., and in the evening from 7 30 to 9.30. Courses of oral instruction are given according to the time-table Students have to produce drawings or studies as evidence of their qualification for admission to the school. Punctual attendance is insisted upon, and the doors of the classrooms are rigorously shut five minutes after the time fixed for the admission of students.

The time-table indicates the division of instruction into sections. In each of the three chief sections, viz. drawing, modelling and architecture, there are subdivisions or classes. The elementary and superior sections for drawing, for instance, are each divided into three classes. Each class is again still further split up into divisions.

Students are promoted from division to division only after passing the prescribed tests or competitions.

There are several of these competitions, which take place at duly appointed dates. For instance, there are three competitions in the year for the higher students in respect of each of the following courses:—Drawing or painting from (*a*) plants, (*b*) animals, (*c*) the human figure and designing ornamental objects, patterns, &c. These competitions are of two kinds, monthly and annual

The judging of the monthly competitions is done by three professors, of the annual competitions by six professors. Other competitions may be judged by the assembly of professors or a grand jury of the professors and eminent outside artists associated with them.

A register is kept of the marks gained by students at the competitions, and by these the awards to the students in each course of instruction and work are made. A fixed degree of success at these competitions exonerates each student obtaining it from military service for two years.

All work for the competitions is done in the school, excepting that for architecture, which may be done out of classrooms, The school is attended by from 700 to 800 students a day.

School of Porcelain Manufactory, Sèvres.

The school attached to the National Manufactory of Porcelain at Sèvres is attended by some twenty-six students. Each passes through a four years' course of instruction. During the first two years the students are obliged to go through a course of instruction in chemistry and the technology of ceramics.

Relative freedom in pursuing their work is allowed to students during their third and fourth years, when the instruction is divided into two parts, one of decorative art and one of technical pottery, &c. The training is directed towards fitting the students to become chiefs of workrooms (chefs d'ateliers) or managers of works.

The manufactory is quite distinct from the school.

There are eight professors for the school, of whom a painter, a turner and a modeller also belong to the staff of the manufactory.

There are quarterly examinations for the students, the results of which are looked over and marked by the director of technology and the director of art, associated with the professors.

The notes and work done in each class are looked over each month by the professor in charge and due record kept of the progress or otherwise of the student. The students' works are kept for reference. The short-time work by students has to be well presented, although it is not carried to such a pitch of perfection as in the long-time tests or competitions.

Fines are imposed for irregular conduct on part of the students.

The classrooms are in charge of guardians (surveillants de discipline), who also clean up the rooms.

The instruction is given at fixed times for the students of the school and the apprentices of the manufactory.

There is a superior council of perfection (conseil de perfectionement), consisting of a distinguished architect, painter, modeller or sculptor, technologist and the administrative director, with whom the Minister associates outside men of distinction as judges. This council prescribes the work to be done and how it is to be done at the manufactory.

Ecole des Beaux-Arts.

The administration of the Ecole des Beaux-Arts is confided to a director who, nominated by the President of the Republic, is appointed for five consecutive years and attends as a rule once a day at a time convenient to himself, and for as long or as short a time as the matters brought before him by the secretary require. The director takes little or no part in the teaching.

The professoriate is appointed by the Minister, upon the simultaneous nomination of the director of the school and the superior council of the school, their nomination passing through the Director of Fine Arts to the Minister.

There are three sorts or orders of instruction:—1. Oral instruction by lectures or demonstrations. 2. School instruction in the three divisions of (*a*) painting and engraving, (*b*) sculpture and medal sinking and gem engraving, (*c*) architecture 3. Special instruction in studios or ateliers of which there are eleven—(*a*) three for painting, (*b*) three for modelling and sculpture, (*c*) three for architecture, (*d*) one for engraving, (*e*) one for medal sinking and gem cutting.

There are a library and collections, chiefly of casts from sculptures, architectural details, &c., for the study of students.

The admission to the lectures is practically free, and the public can also attend, provided there be room and that tickets of admission have been previously applied for and obtained under the sanction of the director of the school.

The admission of persons to the school is free, but limited to those who pass the required tests, which are of a very high standard.

Admission to the ateliers or studios is regulated by the space considered available by the chief of the studio, preference being given in the first place to those students of the school who desire to be admitted, and are, according to the record of their successes in the school, the more highly qualified. Entries or inscriptions for admission to the studios have to be made by applicants at the commencement of each year. Such as do not enter their names in this way are at the end of the first month of the scholastic year assumed to have renounced further attendance in the studio.

The actual instruction given in the school, as distinct from the studios, consists of corrections and criticisms by prefessors, of whom there are ten, who each attend in rotation, one at a time, on Wednesdays and Saturdays for two hours, from four to six, for two months. Thus each such professor in the course of a year gives about sixteen attendances for this purpose. During the times that the students are at work at the appointed times each day of the week, discipline is maintained by superintendents (laymen).

Each chief of studios comes twice a week to his particular studio throughout the year.

A professor, who takes the course of drawing from ornament, corrects the work of students in the gallery of casts twice a week.

The studies generally comprise lessons, exercises and tests, or competitions, which latter apply—in respect of the courses of oral instruction—in respect of the school proper, and in respect of the studios, in accordance with programmes approved by the Conseil Supérieur d'Enseignement de l'Ecole.

This Council is an organisation or body quite distinct from the school itself. It is presided over by the Minister. Among various other points upon which it decides may be instanced the keeping up of a list of suitable persons to fill professorships in the school. Some of the members of this superior council are also professors and lecturers at the school.

But apart from this superior council, a general assembly of the professoriate of the school is held twice a year, at the commencement and the end of the scholastic year, to consider, under the presidency of the director of the school, all matters touching the studies. Besides these meetings, the director is empowered to call others at which sections only of the professoriate attend, and others again at which the whole professoriate is present

As regards the regular school competitions, to enter which is a traditional ambition and habit amongst the students, there are in each year, for the section of painting and for that of sculpture, four, consisting of drawing and modelling from the life and the antique alternately, besides four competitions in figure composition, consisting of one test only at the first and third quarter of the year, but of two tests at the second and fourth quarter.

In a special division for simultaneous instruction in painting, sculpture and architecture, there are two competitions in the year, each one of which involves a test in the three branches.

This course of simultaneous instruction appears to be intended for students desiring an all-round training, instead of the specialised training involved in the pursuit of each of the three arts separately.

Every half-year there are competitions or tests for the students of perspective and anatomy. Each year a competition in history and archæology. For the architectural students there are almost a corresponding number of competitions.

Altogether there are upwards of sixty competitions in the school year, of which painter and sculptor students may take some twenty-seven, second division of architecture students may take twenty-three, and first division of architecture students may take ten

Juries are appointed to judge the works of students done either as short-time tests or as longer time competitions. A sixth part of the juries is renewed annually. There are five juries, one for each of the divisions :—(1) Painting, (2) sculpture, (3) architecture, (4) engraving, (5) medal sinking and gem cutting.

Besides the school competitions there are competitions for special prizes, in number about fourteen—five for painters and sculptors and nine for architects, varying from 100 to 947 francs each All these prizes are due to the liberality of private benefactors of the school.

The competitions for the Grand Prix de Rome are held at the Ecole des Beaux-Arts, but under the direction of the Academy of Fine Arts. These competitions are open to all French artists between the ages of twenty and thirty years, and involve extremely high tests of efficiency.

Monsieur Crost supplied a number of printed papers relating to the administration of the school and its competitions, but they are too bulky to attach.

It will be noticed that the professors at the Ecole des Beaux-Arts are men of the highest distinction in their particular walks, that they give their services at particular times, and are not whole-time officers.

School of the Gobelins.

The National Gobelins Tapestry Manufactory and its school are organised very much on the same lines as the Sèvres manufactory and its school. The students of the school go through courses of elementary and advanced drawing. They receive instruction in the various departments of the manufactory of tapestries from the artist-weavers, and their progress from stage to stage is rigorously checked by means of tests and competitions carried out by the directors and professors.

BRISTOL SOCIETY OF ARCHITECTS.

THE ordinary monthly meeting was held on the 12th inst. at the Fine Arts Academy, Mr. Joseph Wood, vice-president, in the chair. Mr Harold Smith, A.R.I B.A, lecturer on architecture at the Merchant Venturers' College, then delivered an address on "The Architects of the Court and Capital of England in the Seventeenth Century." The speaker first dealt with the Renaissance of the Elizabethan and Jacobean periods, showing how it eventually culminated under the patronage of the Court in the work of Inigo Jones He then spoke of the effect of the civil war, and pointed out that most of the artists of the Restoration were foreigners. After describing the capital as it was in the seventeenth century, the speaker concluded by noticing the work of Sir Christopher Wren in restoring the City, building St. Paul's and adding to Hampton Court and Greenwich Hospital. Some interesting remarks were made by Mr. M. A Green, who moved a vote of thanks, and this being seconded by Mr. Cyril Thompson and supported by Mr. H. Dare Bryan, hon secretary, was carried with acclamation. The paper was illustrated by numerous fine photographs shown by means of the lantern, and also an interesting collection of prints relating to work of the period.

GLASGOW ARCHÆOLOGICAL SOCIETY.

THE forty-fourth annual general meeting of the Glasgow Archæological Society was held on the 15th inst. in the Society's Rooms, 207 Bath Street, Glasgow. Mr. George Neilson, F.S A.Scot., presided, and there was a large attendance. The annual report of the Council, which was submitted, stated that during the past session six meetings were held. Thirteen new members were admitted. The report of the Society's committee on the investigations on the line of the Antonine Wall, which was issued during the course of last session, had met with a most favourable reception from scholars at home and abroad. The Council recorded with regret the death of the Marquis of Bute, who for many years took a lively interest in the work of the Society, and also the death of Dr. James Macdonald, who, from the date of his becoming a member of the Society in 1884, had taken a warm interest in promoting its prosperity and usefulness. The Council had received intimation of the resignation of Archbishop Eyre of the office of president of the Society, and had passed a resolution expressing their appreciation of his valuable researches and his splendid services to the Society. On the motion of the chairman, the report was adopted. Office-bearers were elected, Principal Story being appointed president. The hon. treasurer (Mr. Walker) read an abstract of the finances, which showed that the total funds on hand at the close of the year was 362*l.* 4*s.* 10*d.* Thereafter, Mr. J. Romilly Allen, F.S.A., delivered a lecture on "Early Christian Monuments of the Glasgow District." He dealt with the number of the monuments, their geographical distribution, their decorative features, the object of their erection and their age. He divided the monuments into three groups—an earlier group, which were more near to the Celtic Pagan; a later group, which were more allied to the Norman influence, and a middle group, showing the Scandinavian influence of the Viking invasion.

GLASGOW ARCHITECTURAL SOCIETY.

THE opening meeting for the season of the Architectural Section of the Philosophical Society of Glasgow took place on the 12th inst. in the rooms of the Society, 207 Bath Street, Glasgow. Mr. A. Lindsey Miller, president of the section, occupied the chair, and the chief business of the evening was an address by the chairman on the history of the Society. Mr. Miller said that the Society might be said to have begun towards the end of the year 1844. It was then agreed by a number of architects to hold monthly meetings for the promotion of the interests of members of the profession. These meetings were held at first in the Court tavern in George Square, and later in the Assembly Rooms in Bath Street. In ten months, however, they suddenly ceased Some twelve years later the architects of Edinburgh and Glasgow combined to form the Architectural Institute of Scotland, and this arrangement continued for some years until the unfair treatment of the Glasgow architects by the Edinburgh section disgusted the profession in Glasgow, and the Institute was broken up. Subsequently was formed the Architectural Section of the Philosophical Society as they knew it. Mr. Miller was thanked for his address.

ENGLISH CHURCH ARCHITECTURE.

THE next subjects taken up by the Rev. Mr. Marshall for his course at Horsham were fonts and monuments, many of which had not, speaking generally, received from antiquaries all the attention which they deserve. According to the excellent report in the *West Sussex County Times*, he said in pre-Norman times fonts were frequently mere plain blocks of stone. Bede says that many were not made of stone, and this fact may in part account for an almost complete absence of pre-Norman fonts at the present day. There must have been fonts. It was surprising the number of Norman fonts remaining when we considered that the men who made them had to put out their fires and lights so early. Sometimes fonts were found in odd places. They had been superseded by others in the church. He, the lecturer, once saw one stowed away behind a waterbutt. The usual position for the font was at the west end of the church, near the door, probably typifying that baptism gave entrance to the Church. It was directed in 1564 that the font be not removed, and that the curate should baptize as ordained. In 1645 an entry of the purchase of a basin for baptisms at a cost of 25*s.* was still to be seen, and of the sale of the old stone font for 7*s.* Later this last was bought back from the widow of the purchaser for the price he had paid for it. Norman fonts were either square or round, and more or less heavy and sculptured with figures and design. Square fonts not resting on a stem or shaft were very rare They usually were to be found mounted on a central shaft with light corner shafts. There were four chief examples of this style named. Some were cup-shaped, with or without stem, the one shown having an inverted base. There was also the form consisting of a bowl resting upon arches. There were fewer fonts belonging to the Decorated period than to any other. The octagonal form was typical of Regeneration, and was almost universal. Many examples displayed an exuberance of niches. At first the practice of raising the font upon steps was used little, but later, when it was so, we found elaborate tracery on the risers of these steps. Fonts were almost always made of stone; there were some of lead, but a genuine wooden font hardly ever existed It was ordained by a constitution of Edmund, 1236, that the font should be decently covered. There were magnificent Jacobean font covers still in existence. With regard to monuments, there were very few prior to the Norman Conquest. The original idea was that they should ontain the remains of the person to whose memory they were ected, or should define their exact place. At first burial took ace outside the church, and when afterwards some were terred within it this was done to remind worshippers to pray r the departed. St Augustine was first buried outside anterbury Cathedral and then removed to the porch. Altars ere endowed, some in perpetuity, others for a period. There ere chantry altars—endowed altars. All side altars were not hantry altars because many had never been thus endowed. hurches became crowded with tombs, many exhibiting a onderful accuracy of detail. These details show us the ead as they were in life and were specially valuable. Stone offins were the earliest form of monument. They were sunk nto the ground, the lid only showing Sometimes the lids ere slanted or coped. At first they were without inscription, nd the cross was not generally carved upon them until the nd of 1200. When effigies came to be used early in 1300 the ackground only was sunk and tombs were low. In the times f Richard I, John and his successor, knights in armour ppear. Some quaint photos of "partial effigies" were shown. n these the head, bust and feet are disclosed as through the offin lid. Altar tombs dating early in 1300 were from 2 to feet high. Many of the inscriptions on tombs were worked n a metallic composition called "latten," and had been torn way, in similar manner to that on the tomb in St Mary's, Horsham. Figures of angels, called "weepers," were made n this composition (a mixture of copper and zinc) and found pon monuments. The cost of these figures could be ascertained from ancient records. One figure of Our Lady cost 3*s.* 4*d.*, and angels upon the same tomb were set down at 5*s.* ach. There were three types of canopies The first were ecessed into the wall, the second placed between piers but vith their own canopies, and the third stood between piers aving only the arch above as canopy. In tombs of the fteenth century shown, there was no figure except upon a brass placed on the wall behind. Before 1300 incised tones were used, but soon after there appear metal plates unk in the stone. From many of these the crosses had disappeared, leaving only the matrices to show heir form. Many figures upon ancient tombs were represented with their legs crossed. There was some uncertainty egarding the meaning of the attitude. It was not only knights templars who were thus represented; they might have been pledged to serve in or have greatly assisted the Crusaders. In Ireland the figures of ladies, who could not have personally fought, were represented in this attitude. The custom of so representing the dead seems only to have been employed during the Crusades and for about five years afterwards. The name "hearse" or "herse" was derived from the Latin for harrow, and a triangle in this form, with candles at the points of intersection, was placed above the dead and covered with pall. This hearse developed later on into the catafalque

Mr. Marshall remarked that at Rusper and West Grinstead there were some very interesting brasses, and at Cowfold one of the finest in England. Last week the students were invited to bring any lantern-slides which they might have taken of subjects bearing on the matter of the lectures. In response a view of the font at Pisa, which is one designed for total adult immersion, taken by Mr. L. M. Snow, of Horsham, and two views of the large tombs in the chancel of St. Mary's, Horsham, taken by Mrs. Padwick, were displayed through the lantern.

In another lecture Mr. Marshall said that he had pointed out the constant growth of architecture; at certain periods this was, of course, more strongly marked, for instance, between 1140 and 1190 With the eleventh century Christendom awoke to life, and the Romanesque style became worthy of its name. Stately and awe-inspiring were the ecclesiastical buildings then raised Reform was forced on the Church in the twelfth century, and the abbeys built by the Cistercian Order alone confer a special title to recognition for this transition period, which formed the link between the old and the new civilisation of Europe. The principles of Gothic architecture existed long before; practice only was wanted. The pointed arch was probably older than the rounded; at any rate it was as old. Its form came from the East; not so the principles governing its employment. Arabian architecture was entirely different to Gothic. The pointed arch contained the germ of the principles employed. That was that all parts should point upwards. Vaulting compelled the use of the pointed arch, and it was applied to arches of construction before it was used for doors. In this way we got a mixture of Romanesque and Gothic. In the new development we found buttresses with more projection, there was increased lightness and comparatively slim columns, fragile and slender in appearance. The capitals still retained the square abacus, square at least so far as the upper edge went. From the volute sprang the foliage of the thirteenth century. Most of the Norman ornaments now disappeared, except the dog toothing and chevron. We found a contest in constructive details going on with what had gone before. Abbeys were built in the form of a Latin cross; but there were no lofty towers until a later date, only a low lantern. No figure-carving distinguished the period. Architecture was dignified in its proportions Before 1300 the style was founded upon classical example. Piers were enormous, and weight distributed over the whole length of the walls. Then suddenly dawned the discovery of the true vocation of architecture. Vaulting was necessary to the perfection of Gothic architecture. Its vertical principle could not be carried out without it. Even with high-pitched wooden roofs there was no vertical ascent all the way. With the stone vault the eye ranged uninterruptedly, whereas a timber roof was a distinct addition in place of being part of a whole. With the Lancet, or Early English style, we get more loftiness and light. To the Norman vaulting was first added vaulting arches; then moulded ribs made all lines on a level of importance. A longitudinal ridge rib appeared and was followed by intermediate ribs meeting in the ridge-band. It was noticed that it was easier to form first a skeleton of these ribs, and afterwards to fill in, rather than to construct a roof and afterwards add ribs, mostly for ornament This was a complete reversal of the old method and produced a result much more ductile. At this time "bosses" were introduced. The pointed arch created a strong outward thrust, to counteract which stouter buttresses and flying buttresses were needed. Sometimes heavy pinnacles were used in this connection. Vaulting piers and buttresses now carried all the weight and walls were not needed for strength. This gave scope for the artists in painted glass, who wanted space, and could now have it. The window had become the ruling feature. Weights were now collected together and carried to the ground by means of vaulting and piers. Consequently the intervening wall spaces were not required to be so thick. The plan of construction was everywhere displayed, and men's delight in this made it almost a canon to show these essentials. Every stone now had its work to do The builders were the same men, and their children who had built in the older manner. All later changes were but developments of this thirteenth-century method; there was no difference in principle Saxon windows were chiefly unglazed. In the Norman ones, stained glass was more common. Larger windows were required for display Lancet windows were grouped at first with distinct head mouldings to each and wide wall spacings between; later we see them with a continuous head moulding and mullions merely between the lights. For half a century after the disappearance of the Norman arch, windows continued to exhibit no tracery. The comprising arch above these grouped lancets grows in importance. But there is as yet a space of blank wall between this hood moulding and the lights beneath. This is pierced and we have "plate tracery;" this is followed from 1245 to 1315 by "bar" or "geometric" tracery. From 1315 to 1360 a further development is named "curvilinear." Plate tracery was developed holding in mind the view of the openings from the inside, bar thinking of the appearance from without. Churches built at this date appeared to have greater height and slenderness. The spires were mostly of the broach order, the roofs high-pitched. There was not often a clerestory In large conventual churches the choir was frequently twice as long as in Norman churches. West fronts were elaborated. There was greater complication of parts, but the greatest change was in the roof. Everything was lighter and loftier. There were deeply-cut mouldings and sculptured figures and foliage. The Lancet style was unrivalled for grace and purity of detail.

GLASGOW INSTITUTE OF ARCHITECTS.

AN extraordinary general meeting of this Institute was held on the 13th inst. Mr. David Thomson was in the chair. A special resolution was confirmed bringing the declaration required from members of the local Institute into conformity with the declaration of the Royal Institute of British Architects. At the same meeting reference was made to the death of Mr. Young, architect of the Glasgow Municipal Buildings and other important works, and the secretary was instructed to minute an expression of sincere regret thereon. At the close of the general meeting a meeting of the Alexander Thomson Memorial Trustees was held under the presidency of Mr. T. L. Watson, for the purpose of examining the drawings and sketches submitted by Mr. D. Rome Guthrie, the Alexander Thomson travelling student Descriptive notes of Mr Guthrie's journey were read by Mr. M'Gibbon, and the trustees considered that the drawings and notes afforded highly satisfactory evidence of his having made due improvement by his travels during the three months. The treasurer was instructed to make payment of the second instalment of the 60*l.* prize, and to congratulate Mr. Guthrie on his drawings.

NORTHERN ARCHITECTURAL ASSOCIATION.

THE opening meeting of the winter session of the Northern Architectural Association was held on the 14th inst. at Newcastle. The president (Mr. William Glover, F.R I.B.A.) was in the chair

The hon. secretary (Mr. A. B. Plummer, F.R I.B A.) read the address of the president, who, suffering from a severe cold, was unable to read it himself. He said it was sad when they looked through the past history of the Association, to find that there were only four left who were connected with its formation —their past president and honorary secretary (Mr. Thomas Oliver), their past president (Mr. Archibald M. Dunn) and Mr. F. R. N. Haswell and Mr. Gibson Kyle. He quoted from the first proceedings of the Association, for 1858-59, giving the original members, and showing how, at a meeting held at the Exchange Hotel on Saturday, November 13, 1858, a number of gentlemen formed themselves into a society to be called the Northern Architectural Association. The Association had since made steady and rapid progress. They had now 53 members, 70 associates and 59 students, making a total of 182. It was gratifying to note that there were only three of the allied societies older than theirs, namely, Bristol, the Royal Institute of Ireland and Liverpool, only one with more members and associates, namely, Manchester, which had four in excess of theirs, and was the only society that had a larger number of Fellows and Associates of the R I.B.A. It was also a great pleasure to note that their students had had a most successful year, and had produced very superior drawings Since the last report five had passed the R.I.B.A. examinations. He hoped more would do so before the end of the year; and he thought their students were realising its importance. He had little to report as to the progress of buildings in Newcastle owing to the unfortunate strike that had prevailed for some time. It was a thousand pities that labour disputes could not be settled by arbitration instead of by the disastrous method now adopted He was exceedingly glad to know that the proposed new town hall and art gallery were now being seriously considered. As to the future home of their Association, he did hope that a larger amount of help would have been promised. In his former address he offered to give 100*l*. if they would raise 900*l*., and to double his offer if they doubled theirs. In his illness of last year he arranged that this promise should be carried out if he passed away. He now offered them 500*l* if they would raise 500*l*, or 1,000*l* if they would raise 1,000*l* before the close of the century; or he was willing to leave the offer open until the end of his presidential year—March 1901. By this means they might be able to erect a building worthy of their Association, which would no doubt before then be the largest allied society. He would like, before closing his address, to refer to the importance of their corporate bodies taking power to secure open spaces by assisting to provide them. The landowner in co-operation would ultimately benefit, as the property surrounding such spaces would be increased in value. He quoted statements supplied by Mr Laws, the city engineer in Newcastle, and by Mr. Bower, the borough surveyor at Gateshead. Mr. Laws's statement showed that within the boundaries of the city of Newcastle there had been built during the last twenty years 3,614 self-contained houses, including villas, and 6,910 flats, making the total number of houses erected 10,524. Within the borough boundaries of Gateshead, during the last five-and-twenty years, 720 acres of land had been laid out for building purposes; 158 superior self-contained houses, 875 workmen's self-contained houses, and 2,650 flats had been erected, and 130 flats were now in course of construction. He had also some interesting notes on Gateshead from Mr. L. H. Armour From the information he had, he estimated that there were about 800 acres of land within a radius of three miles of the Monument laid out for building purposes, but not yet built upon. Assume 20 flats per acre on this area, and they had 60,000 houses and 32,000 tenements at an average of five to a house, giving accommodation for 160,000 people.

On the motion of Mr Oswald, seconded by Mr. T. Browne, Mr. Glover was thanked for his address, and the proceedings ended.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

THE annual gathering of the Leeds and Yorkshire Architectural Society, which is allied with the Royal Institute of British Architects, took place on the 12th inst. at the Queen's Hotel, Leeds. It took the form of a social, in which business was happily combined with pleasure. Mr. W. Carby Hall, F.R I.B A., president of the Society, was in the chair, and was supported by a large number of members and associates.

In the course of his opening address, the President remarked that, unlike the immediate past, the building trade had not tasted the apple of discord of late. He noticed, however, that there was a probability of a lock-out of bricklayers in the North, and the masons of Leeds and district were askin for a halfpenny per hour advance, so that they might ear the same wage as the bricklayers. The Society of Architec had, he proceeded, given their support to the principle, if n to the wording, of a Bill having for its object the compulso registration of architects. The outlines of the Bill recently befor Parliament were, in his opinion, very reasonable, and appeare to be framed in such a way that the profession as a who would greatly benefit. At the same time, he felt there wer objections to registration One of these would be the com pulsory registration of those men who had done and wer doing so much mischief to the architectural profession, notabl the speculative builders, clerks of works, furniture dealers an a host of other tradesmen who considered architecture to be o a par with insurance canvassing, and who entered the field an dubbed themselves architects so that they might add anothe branch to their already (in many instances) multifariou callings. But would not this evil, he asked, go on increasin unless put a stop to, and would it not be much better t recognise this and stop it at the earliest moment? Afte the Bill was passed every one would have to prove himse sufficiently educated—say up to the standard of the presen voluntary examination of the Institute—before he woul be allowed his diploma. That, in his judgment, woul create a higher standard of professional excellency, an consequently a greater amount of public confidence. A present in the provinces there was often a want of confidenc in the local practitioner when some large buildings were abou to be erected, due in some measure probably to the fact tha there was no guarantee that he was competent to carry out th work. The people interested send for the London man to com down and teach the local architect the special requirements o his fellow-townsmen, they being evidently of opinion that th fact of a man practising in London proved him to be competent England was practically the only European country in which architecture was not a registered profession requiring a diploma before any man could commence practice, and if registration was made compulsory here the public generally would, he thought, obtain an advantage from the improved constructive and sanitary portions of the architect's work, especially in buildings designed for the artisan class.

Continuing, the President expressed pleasure that the Roya Institute had actively taken up the question of the reform of the law relating to ancient lights, and said all would admit the injustice and injurious operation of Lord Tenterden's Prescription Act of 1832. He hoped that some comprehensive system of legislation would be passed by which an architect, when he had a building to erect on a site where ancient lights surrounded him, might know at once what he could do, instead of being put to all the annoyance and cost of a visit to London to repel the issue of an injunction, besides suffering delay in the erection of the buildings and the many other evils.

Mr. William Watson (Wakefield) moved a vote of thanks to Mr. Carby Hall for his address, remarking that the registration of architects ought to have come to pass many years ago.

Mr. Alfred Marshall (Otley), in seconding, expressed a hope that members would impress upon their members of Parliament the duty of supporting the registration of architects when a Bill having that object in view was again brought forward.

The President announced that there had been practically no competition for the prizes offered by the Society There was no competition for the silver medal offered for measured drawings of old work, nor for the design or construction prizes. Mr H. E. Henderson was presented with four guineas for an essay on "Ancient Ecclesiastical Architecture in the Neighbourhood of Leeds," half of this amount being given by the President in recognition of the creditable character of his work. Mr. S. R. Day carried off the sketching prize.

Subsequently an enjoyable smoking concert was held, amongst those taking part being Mr. Gilbert Jackson, Mr. W. Hamilton Fearnley, Mr. O. Hudson and Mr. Alfred Giessing (cello). Mr. Gawthorp and Mr. G. Cattle supplied the humorous element, and Mr. H. W. Sedgwick acted as accompanist.

PROPOSED TRIUMPHAL ARCH, CAPE TOWN.

A PROJECT of a memorial arch in Cape Town has been prepared by a local architect, Mr. G. M. Alexander. His suggestion is that there should be erected at the foot of the Avenue an arch that would at once be an adornment to the city and a fitting monument to the honoured dead, and to the no less honoured living associated in the war. In style it would be of the nineteenth-century Renaissance, after the model of the arches of Severus Septimius and Constantine at Rome. The lower part of the arch, say the first 10 feet, might be carried out in granite, and the superstructure in approved colonial freestone. The structure would consist of a main arch and two side arches.

The main arch would be about the width of the Avenu between the two lines of oaks, and would admit of the passage on State occasions of vehicles going to Government House, and be used by pedestrians at all times. Here let it be said in parenthesis that it is not for one moment suggested to mar the present peaceful seclusion of the Avenue by converting it into a thoroughfare for general traffic. It is not intended that the arch should be used by other than pedestrians at any time, save when a new Governor or some State dignitary arrives. Such an event might happen but once in several years Then, and hen only, would the Avenue be desecrated by carriage wheels. In the periods between the entrance would be closed by massive iron chains so arranged as to admit only people on foot. The two side arches would always be reserved to foot passengers, State occasion or no State occasion. So far as the exterior is concerned the principal attention would be given to he façades looking on Adderley Street and up the Avenue. They would be elaborately and becomingly ornamented—it is unnecessary here to go into all the details of the design—and surmounted by a handsome dome. The façades towards the cathedral on the one hand, and the Houses of Parliament on he other, would be in harmony.

The left-hand arch entering from Adderley Street leads to he side path of the Avenue. In the centre of this arch, on the eft, is an arch leading to the escalier. This gives access to a room directly above this left arch, which it is proposed should be set aside for the nurses and medical staff engaged in the war. It will be lighted by large stained-glass windows, with itting war and other designs. On the walls will be representations in metal of the war, and the room will be made the repository of things peculiar to surgery and the campaign. The walls of the staircase leading up from the arch below will be ined with stone dados, surmounted by war designs in copper. So much for the left arch. The right arch will be like to it in every particular, the apartment above it to be used as a record-room for all—Army and Navy, Regulars and Volunteers, Home-born and Colonials—who have died in the war, the names to be engraved in copper.

The centre arch will be higher than its neighbours and suitably domed and panelled. On each wall will be an ample recess, the one to contain the statue of Lord Roberts and the other a statue of Sir Alfred Milner, both to be in marble and flanked on the right and left by tablets bearing a record of these two notable men. In the side arches will be several niches, in which might be placed statues of others worthy of being remembered in connection with the events of the last twelvemonths. Above all three arches will be a third storey in the shape of a single chamber to be used as a museum for war trophies and emblems. It will be reached by stairways from the two smaller rooms below, and be sufficiently lighted by the dome already indicated as surmounting the entire edifice. Many panels will be there for the reception of illustrious names and appropriate carvings. The ceiling of the dome will be artistically panelled and be lined with phases of the war depicted in copper, and the windows will be of stained glass. To return once again to the exterior of the structure, at the extreme corners of the parapet will be representative figures of the regular forces—army and navy—and four horses with their riders, representing the mounted corps who have done such excellent service during the war. Within these extreme points and at the four outer corners of the base of the dome will be figures symbolical of the volunteers and of the various colonies. Then on the four sides of the dome it is suggested to place tokens of the four great continents, Europe, Asia, Africa and America, in the shape of cherubim supporting their particular portion of the globe, surmounted each by a star of light.

The dome itself will support a base, in the four corners of which will be figures of the medical and nursing staffs, and above all will be a massive statue of Peace. All these outer figures will be executed in bronze, the better to withstand the ravages of time. The sheltered statues below will not be so exposed to the weather, hence the proposal that they should be in marble The arch as a whole, including the topmost figure, will be, according to this design, about 70 feet in height, and consequently present a most imposing appearance

In matters of this kind someone has to take the initiative. Mr. Alexander has in this instance put forward the design described above merely to give the public an idea of what might be done, not necessarily what absolutely should be done. He has worked at it more as a hobby than anything else, and from a desire to contribute something, if it be only a suggestion, towards the commemoration of what surely deserves to be commemorated. The rest is for the public to do: to form a public committee, should such be deemed desirable, and take whatever further steps may seem fit.

Our Readers have been accustomed for many years past to expect something good from the Art Union of London, but they have never had anything better than the plate to be issued this year, entitled "The Meadow Pool." The etching is by Mr. David Low and Mr. C. O. Murray.

THE RHIND LECTURES.

THE fifth of Mr. Joseph Bain's Rhind lectures in archæology treated of "Edward II.—Abdication—Edward III." Commencing with events immediately after the battle of Bannockburn, which had been characterised as a "crowning mercy," for it seated Bruce on the throne that had cost so much blood, although more was to be shed before his recognition was finally yielded by England, the lecturer dealt with the circumstances which culminated in the two years' truce which Edward was obliged to accept in 1319 He then referred to Edward's last invasion of Scotland in 1321-22 After describing that expedition and the English king's return to his own country, the lecturer related how Bruce surprised him at Byland Abbey, and how Edward, who escaped with difficulty to York, was nearly taken prisoner. On May 30, 1322-23, Edward was compelled to conclude a truce with the King of Scots for thirteen years, and that was among his few remaining acts of sovereignty, for his dispute with the King of France, coupled with internal dissensions, stirred up by his queen and her favourite Mortimer, embittered the last days of his inglorious reign of twenty years, which reign came to an end by his abdication in favour of his son, the third Edward, on January 24, 1326-27. The new king was soon to show his mettle, and for his long reign of fifty years to work much harm to Scotland, and undo for a time the unity of its people, which had been cemented by the severity of his grandfather, the genius of Robert I., and the inefficiency of his own father. On March 6, after his accession, he ratified the truce concluded by his father; yet the Scots were the first to break it. The King of Scots, now afflicted with leprosy, brought on by his hardships while a fugitive from the pursuit of Edward I, and unable to take the field as of old, despatched the Earl of Moray and Sir James Douglas with a strong force into England. They marched as far south as Weardale and returned unmolested, Douglas almost capturing the young king—he was not sixteen —who, on learning that the Scots had got away, was said to have wept. It was not unlikely that this rough experience in his first campaign sharpened his hostility in future dealings with our country. Proceeding, Mr. Bain said a curious episode of that time was discovered by himself in the records, not hitherto known in his belief That was an agreement executed at Glen Douyn, in Ulster, between the King of Scots and Henry de Mandeville, the English seneschal there, on July 12, 1327, by which the king granted a truce for one year to the people of Ulster on condition of their delivering a certain quantity of wheat and barley in the harbour of Larne. So that at the very time that Edward III. was in search of Moray and Douglas on the marches, the King of Scots was attempting a diversion in their favour in Antrim. Less than a year after the marriage of his son David and the English princess, which took place in July 1328, Robert I., worn out by disease, died on June 7, 1329, in his retirement at Cardross, on the Clyde. Robert the Bruce, the lecturer went on to remark, was one of those rare characters who, shaking off the evil influences of early life, ripen into statesmen and heroes Forced into action by unforeseen events, he revealed his great qualities in the stern trial of his revolt against his royal patron. Though his nearest kindred and friends perished by the headsman's axe, and though he had to wander in his native hills, his resolute spirit bore him through troubles and disasters till his constancy was crowned with success. His faults were those of his time, his virtues all his own. The lecturer then dealt with, among other historical events, the appointment of Thomas, Earl of Moray, as regent, his death in 1332, and the fresh troubles which arose after the appointment of his successor, Donald, Earl of Mar, who was defeated and slain at Dupplin on August 12, 1332, the crowning of Edward Balliol on September 24, the choosing of Sir Andrew Moray as regent and the flight of Balliol near Annan.

The subject of the sixth and last of the course was "Edward III.—Edward Balliol and David II." At the outset the lecturer remarked upon Edward Balliol's liberality to his English adherents, and described Edward III.'s siege of Berwick-on-Tweed, the battle of Halidon Hill in July 1333, the death of the Regent Douglas and the defection of the Earl of March. Next he treated of Balliol's Parliament, homage to Edward III. and dismemberment of Scotland, observing that, as good sometimes resulted from evil, it happened as a consequence of this most unpatriotic act by a King of Scots that for a period of two years (1335 to 1337) there still existed full and very interesting land revenue accounts of the countries administered by English officials, or Scotsmen in English service pay—a period for which there were no similar records for any part of Scotland now to be found at the General Register House. Proceeding, the lecturer sketched the leading events in the history of the country down to 1356, and after alluding to the release of David II. in 1358, and the dealings of Richard II., Henry IV. and Edward IV.

with Scotland, drew certain corollaries in bringing his remarks to a close. All ancient and modern history, too, he said, told them, and his own investigations confirmed it, that no single man, however able, could in the end prevail over a whole people, and the union of nations, more than of individuals, could never be lasting when compulsory. It must be brought about by the slow course of time, and the gradual perception of the advantages attending a close connection. The acts of Edward I. towards Scotland during the brief reign of the Maid of Norway were quite regular, and his desire to unite the realms by her marriage to his son was most natural. So, too, was his course on her death, as arbiter of the Crown, to prevent the bloodshed then likely to arise among powerful competitors, each fighting for his own hand. But the subserviency of all the claimants to gain this great prize must have warped his better judgment, and led to his unrighteous assumption of the overlordship, while the weakness of Balliol afforded the necessary handle for enforcing it. As it happened, the frightful severities of his (Edward I.'s) closing years welded the common people, led by Bruce, into something like a homogeneous nation, and his death at a critical juncture, and the troubled reign of his son, the second Edward, went far to complete what the sternness of the father had begun, and when Edward III. came to the throne the Scots, under Robert I. and his able lieutenants, were a strong and united people. With the disappearance from the scene of that king and his tried veterans and the accession of the rash David II., the Commonwealth so painfully welded together all but went to pieces through the divisions fomented by Edward III and his pliant instrument, Edward Balliol, an evil influence which, but for the continental wars, might have ended in the permanent annexation of Scotland south of the Forth to the English realm. Though such a disaster was happily averted, yet for a hundred more years, under Robert II. and III., and the first two Jameses, the country was thrown into disorder every now and then by English intrigues, in great part owing to its unsettled southern boundaries, not defined till, in the confusion of the Wars of the Roses, James II. gained Roxburgh in 1460 with the loss of his life. And not till another fifty years had passed did the happy union of James IV. and the English princess lay the foundation for the consolidation of the island, which all the efforts of the first Edward and his grandson had failed to secure, and another century of bloodshed and intrigue was destined at length to witness in the person of the Scottish Solomon.

TESSERÆ.

Representations of Natural and Human Creations.

THAT painter will best succeed who, in his representation of nature, produces its character, and rather indicates than correctly renders those objects, the minute features of which, though actually present, have virtually no share in forming the impression. Minds are differently constituted; one, like Turner's, shall grasp the spirit of the scene, whilst another, as far as the art permits, will give the actual form and colour of each individual object, even the least important. The first proclaims the genius to create, the second the talent to execute; but as regards the end to be attained, there can be no doubt as to their respective value. But let no one suppose (as is too often the case) that genius and talent are seldom associated in the same person, for genius, most assuredly, will not slumber until it has found a means to embody even its sublimest and most subtle ideas. Again, in nature's completeness there is no manifest labour, no visible cause of the effect; and herein consists the difference between man's works and God's works, namely, that the former have defined limits, whereas the latter are illimitable. A chair, a complicated piece of machinery, a carpet, or an elaborate Gothic ornament, requires a faithful imitation to produce an entirely satisfactory idea of the object represented; but the trees, the grass, the flowers, the human form, nay, all nature's living works are not to be rendered by such means, and he who thinks that by merely imitating every branch or leaf he can give a just representation of a tree has a very childish notion of the real capacity of art. Nor must it be supposed, as might be the case, that these remarks apply solely to landscape painting, for the same laws must govern the artist whatever may be the objects he selects for representation; and the necessity of not introducing anything but what is absolutely necessary for the elucidation of the subject is, perhaps, greater in historical painting than in any other branch of art For, so long as it shall be thought a sign of great ability to excite the curiosity of mankind, it is difficult for the artist to avoid the introduction of ingenious incidents which, though in a remote degree appropriate, are not necessary to the embodiment of his ideas, and consequently the superfluity becomes a weakness.

Hindu Geometry.

According to Colebrooke, the works of Brahmegupta and Bhascara, of the seventh and twelfth centuries of the Christian era, contain a system of arithmetical mensuration which is certainly older than the compilers mentioned, and in which the property of the right-angled triangle is made to produce a considerable number of results; for instance, the method of finding the area of a triangle of which the three sides are given. By a figure drawn on the margin of some manuscripts, it appears that a demonstration of the property in question had been obtained. The circumference of the circle is given as bearing to the diameter the proportion of 3,927, to 1,250 by the later writer, being exactly that of 3 1416 to 1. Brahmegupta takes the proportion of the square root of 10 to 1, or 3·16 to 1. The superior correctness of the later writer could not have arisen from any intermediate communication from Europe, since the true ratio was not known so near as 3·1416 till after the twelfth century; and the Persians (as appears by the work of Mohammed ben Musa) had adopted this ratio from the Hindus before the discovery of an equally exact ratio in Europe. Although no date can be fixed to the commencement of geometry in India, yet the certainty which we now have that algebra and the decimal arithmetic have come from that quarter, the recorded visits of the earlier Greek philosophers to Hindustan (though we allow weight rather to the tendency to suppose that philosophers visited India than to the strength of the evidence that they actually did so), together with the very striking proofs of originality which abound in the writings of that country, make it essential to consider the claim of the Hindus or of their predecessors to the invention of geometry. That is, waiving the question whether they were Hindus who invented decimal arithmetic and algebra, we advance that the people which first taught those branches of science is very likely to have been the first which taught geometry, and again, seeing that we certainly obtained the former two either from or at least through India, we think it highly probable that the earliest European geometry also came either from or through the same country.

GENERAL.

Mr. R. E. Fry has completed the series of Hermione lectures delivered at Alexandra College, Dublin. The subject of the final lecture was "The Second Generation of Scientific Realists." The lectures will be shortly repeated in London.

The Roman Pavement recently discovered at Dorchester has been purchased by Mr. Alfred Pope, a member of the Dorset Antiquarian Society, by whom it has been presented to the Dorset County Museum. It will be at once taken up and laid in the institution.

The "Art Journal" for December will contain an illustrated description by Miss Helen Zimmern of the life and work of Adolf Hirémy-Hirschl of Austria, whose striking picture, *The Pest in Rome*, will form the frontispiece. A technical article on "Tempera Painting," by Ugolin Allan; an illustrated account of historical and remarkable "'Kerchiefs," by Mrs. Bruce Clarke, and a plea for the recognition of the artistic and monetary value of "Rubies," by George W. Thornley, will appear.

Mr. A. T. Walmisley will read a paper on Monday next before the Surveyors' Institution entitled "The Roofing of Farm Buildings."

Mr. McIlroy has offered 1,000*l.* towards the erection of a Presbyterian church in Caversham Road, Reading, and has presented a site in addition to the gift of a lecture-hall

Mr. Owen S. Scott has been appointed assistant secretary in the Fine Art Section of the Glasgow International Exhibition. He holds the office of keeper of the Bowes Museum at Barnard Castle, but has obtained leave of absence for six months.

Herr Karl Bitter has been given entire charge of all the sculptural work in connection with the Pan-American Exposition at Buffalo. Several of the most eminent American sculptors have been commissioned to make groups and single figures, which will be employed to an unprecedented extent in connection with the exhibition.

A College of modern æsthetics is about to be established in Paris by several young writers, critics and artists. The object is to determine the fundamental laws of modern taste. M. Emile Zola is the president of the committee.

M. Martial de Larbonne, who died lately in France, gained a reputation as an archæologist by his restoration of the château of Montbrun, one of the most remarkable feudal buildings in the country. His work is considered to show marvellous skill, comparable with any restoration undertaken by Viollet-le-Duc.

In Consequence of the annual dinner of the Institution of Electrical Engineers being fixed for Monday, December 3, the second lecture, at the Society of Arts, of Professor Fleming's Cantor course on "Electric Oscillations and Electric Waves," announced for that date, will be postponed until the following day, Tuesday, December 4, at 8 o'clock, to suit the convenience of members and others who might be prevented by the dinner from attending it.

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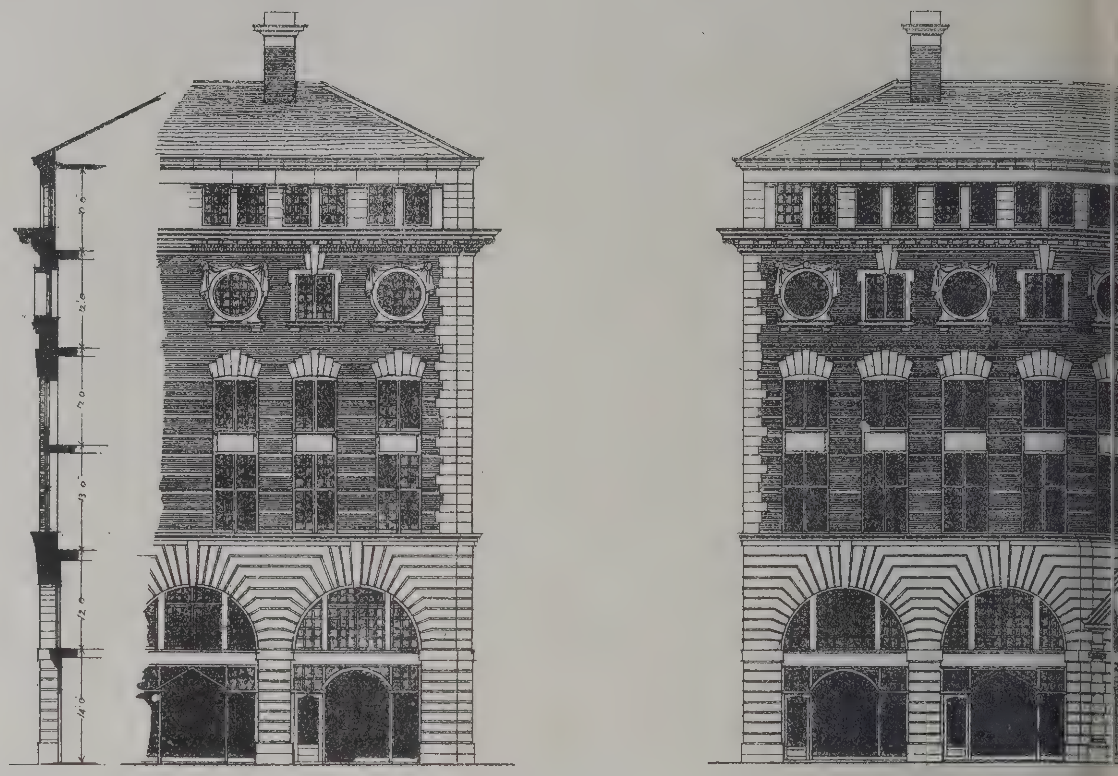

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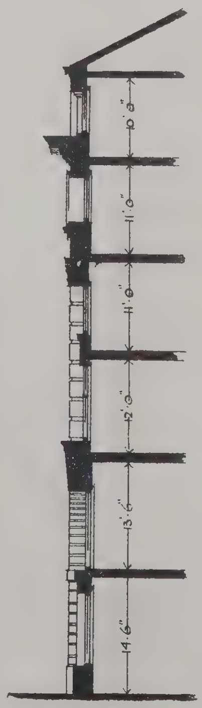

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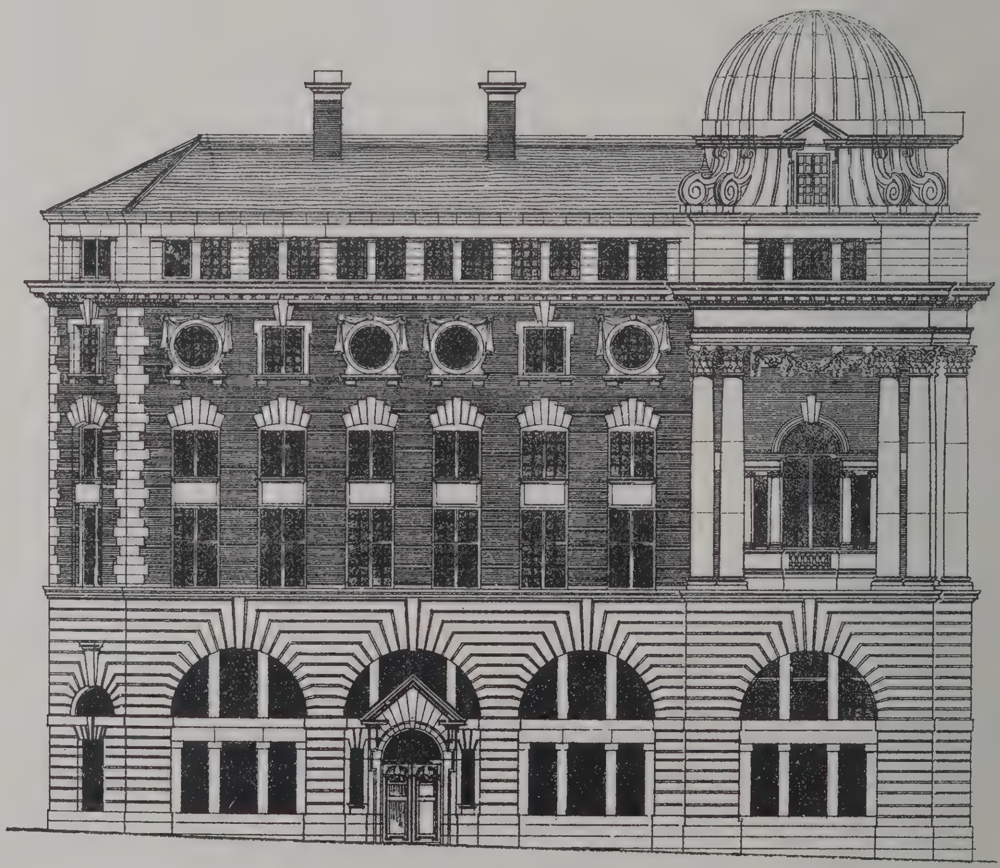

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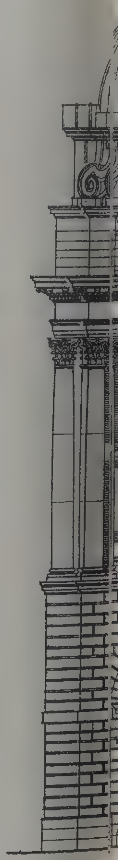

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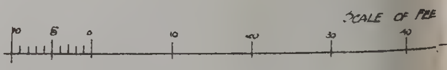

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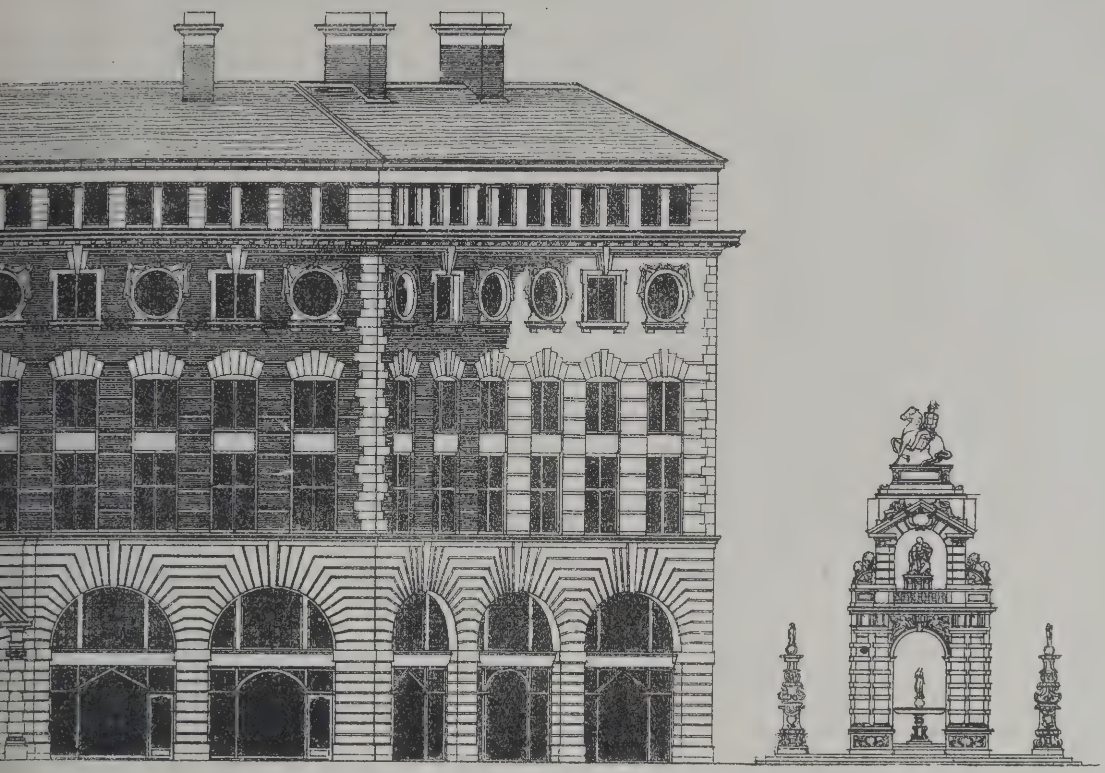

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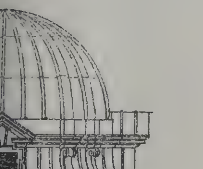

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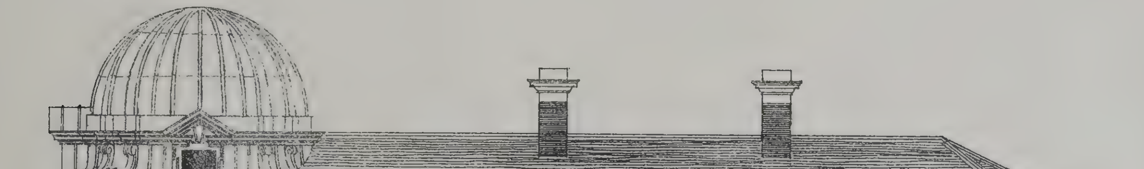

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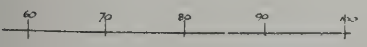

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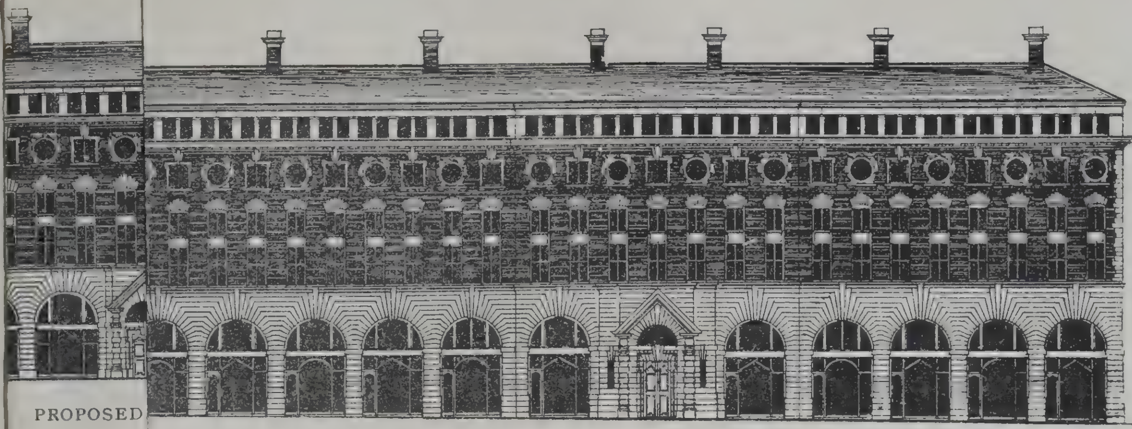

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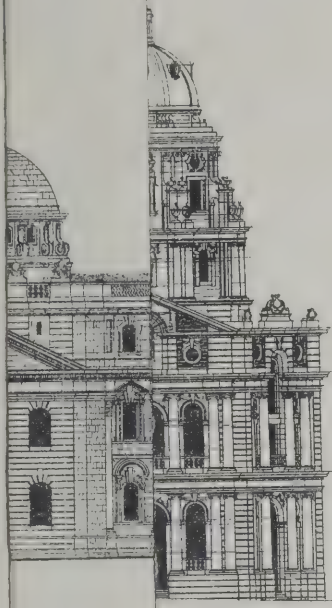

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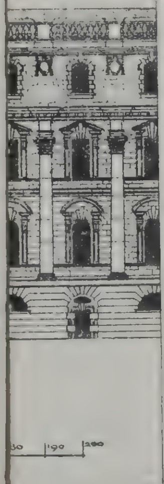

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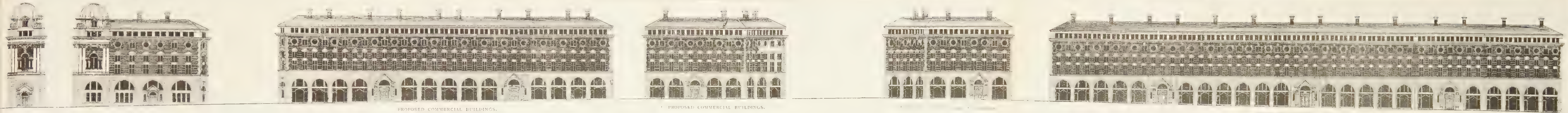
The Architect, Nov 23rd 1900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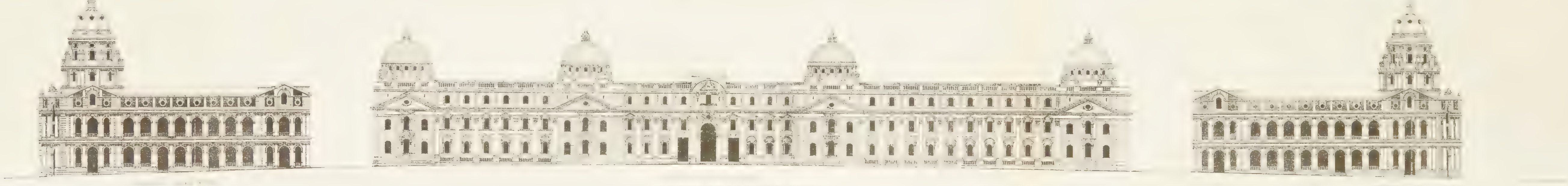
PROPOSED COMMERCIAL BUILDINGS.

NORTH SIDE OF CURVED STREET



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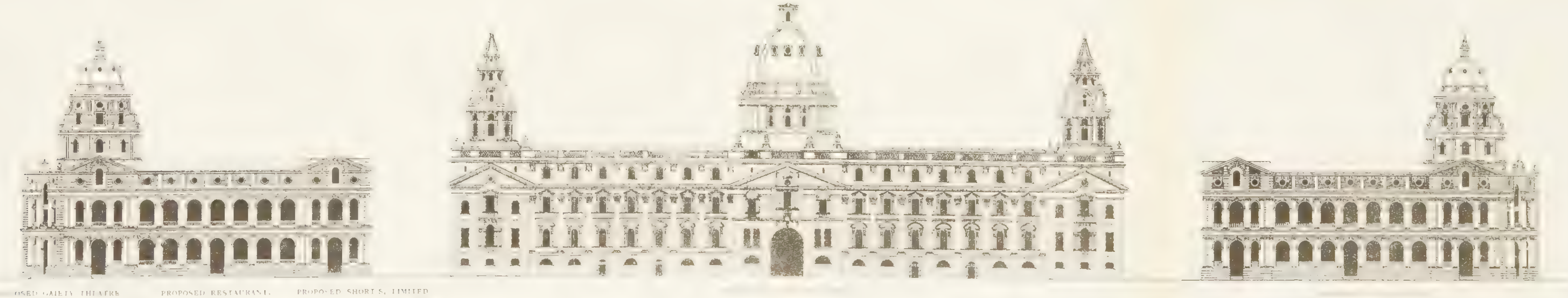

STRAND FRONTAGE

THE LONDON COUNTY COUNCIL HOLBORN AND STRAND IMPROVEMENT. DESIGN NO. 20

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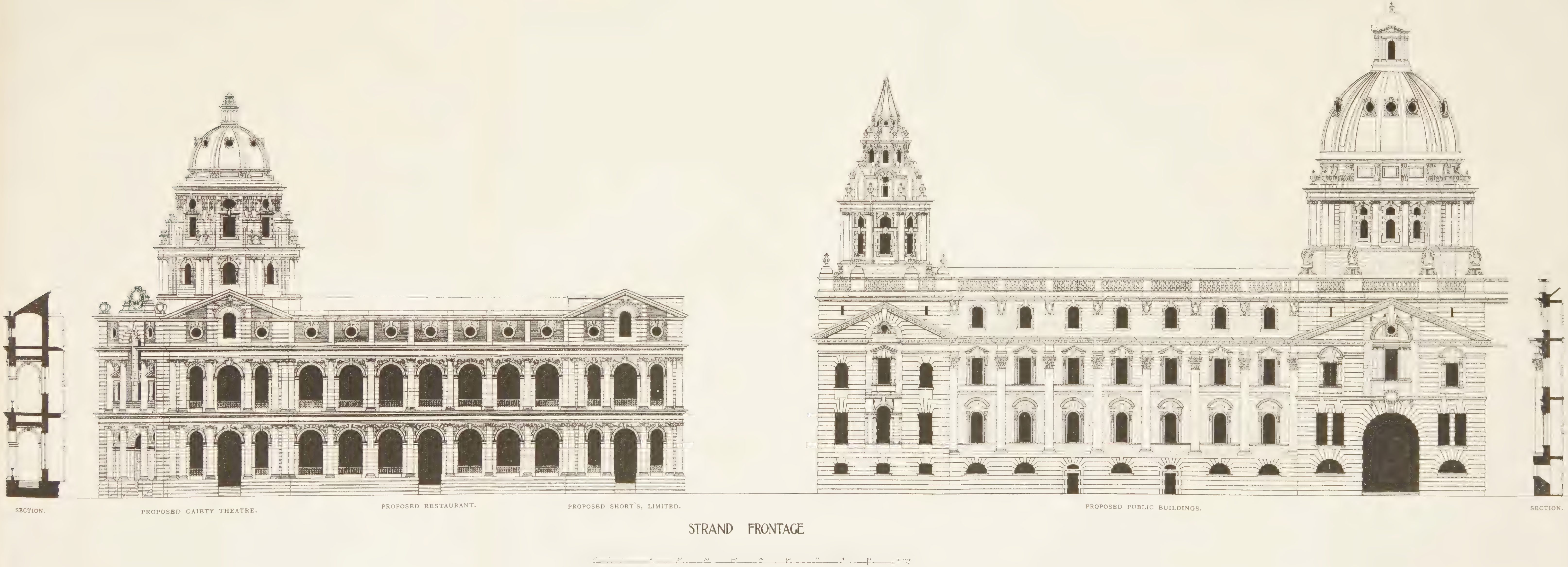


STRAND FRONTAGE

PHOTO LITHO SPRAGUE & Cº Lᵀᴰ 4 & 5 EAST HARDING STREET FETTER LANE E.C.

THE LONDON COUNTY COUNCIL HOLBORN AND STRAND IMPROVEMENT. DESIGN No. 20.

The Architect.

THE WEEK.

AMONG the Parliamentary notices which have appeared this week is one relating to a Bill for the widening of London Bridge. The Lord Mayor and Corporation seek powers to set back the curbs of the existing footways on either side of the bridge, and to throw the space into the roadway, to remove the side walls, parapets and recesses of the bridge, and to execute any incidental works required. The Bridge House Estates Committee have estimated the widening and improvement at 100,000*l.* According to a report of the surveyor, Mr. A. MURRAY, who was assisted by Mr. CRUTWELL, the widening can be carried out either by cast-iron cantilevers and balustrade, or with granite corbelling or cantilevers and an open granite balustrade. The bridge would be increased in width from 53 feet 5 inches to 65 feet. As it was considered that cast-iron additions would now meet with as much opposition as in 1879, the employment of granite has been preferred. Sir BENJAMIN BAKER considers the foundations will be able to bear the additional weight. The present load on them is about 5 tons per square foot, and the additions would only increase that load by 67 lbs. per foot.

THE profession of architecture in London has been deprived of a prominent representative by the death of Mr. HENRY CURREY. His St. Thomas's Hospital is an enduring evidence of his skill, for, as it was one of the first to exemplify the advantages of the pavilion principle, it continues to be, after a quarter of a century, referred to as the type of a modern hospital. Numerous as were the buildings Mr. CURREY designed, they represented only a part of his activity. He was recognised as a sound adviser on all questions relating to property in building, and as an arbitrator his experience was of much value. Mr. CURREY was indisposed to seek after prominence outside the professional limits he had fixed for himself, but as an architect he won the respect of all who consulted him or were associated with him in business.

ON last Saturday morning a writ which was issued by Lord GIFFORD, V.C., against the Corporation of Chichester was served on the town clerk. An intimation had been already given by his lordship that proceedings were about to be taken in the High Court. The action is one of the consequences of the drainage works which have been carried out in Chichester, and should be watched with interest by other municipal bodies. The engineer, Mr. BALDWIN LATHAM, is possessed of a wide experience. But it is now alleged that the sewerage outfall works at Fishbourne have caused so much nuisance, Lord GIFFORD is compelled to apply to the Courts for a remedy, as well as for compensation. In addition, the committee of the Sussex Sea Fisheries District declare that much detriment is caused to the fishing industry, and that enteric fever, in some cases producing fatal consequences to human beings, has been occasioned by the consumption of shell fish exposed to sewage discharges, though very plentifully diluted by mixing with sea water. The fishermen of Bosham and other places are also in opposition. The Chichester Corporation are satisfied of the innoxious arrangements at Fishbourne, and are prepared to resist all claims by scientific and other evidence. Meanwhile it has been decided to ask the Local Government Board to order a public inquiry on the subject, and to request Lord GIFFORD to postpone the law proceedings until the report of the Board's representative is known.

THE resolution recommended by the special committee on new offices of the London County Council, viz. "That, in the opinion of the Council, it is not expedient that a site on the crescent island to be formed in connection with the Holborn to the Strand improvement should be reserved for the erection of new offices for the Council," if adopted at an earlier time would have led to the production of a different class of design to those exhibited and premiated. It is said the improvements committee have desired the decision in order to be able more readily to select one of the designs which would meet the requirements of the case. The special committee have yielded to the urgency of the request, although unable to submit any definite scheme for the erection of a county hall. According to Mr. SHAW-LEFEVRE the chief objection to the Strand site arises from its costliness. Assuming the value to be 2,400,000*l.*, that sum is five times as much as would be required for the purchase of the Aquarium or a site within the Westminster improvement area. It was also thought that the Strand was too remote from the public offices and Houses of Parliament. The committee are to bring up a report without delay about a county hall and new offices, but in the meantime it may be taken for granted the Strand frontage will be applied to other purposes. The resolution is not devoid of interest in another way. It is necessary to reinstate the Gaiety Theatre, the Gaiety Restaurant, SHORT'S premises, CARR'S Restaurant and the offices of the *Morning Post*. But before approving of the elevations of all these buildings, it is well to know what class of structures they are to flank. The problem has, therefore, simply been changed in one of its conditions. But the difficulty of utilising the site has not been diminished.

A PROJECT which may be said to have at once secured public favour has for its object the retention for a number of years of twelve out of sixteen of the edifices on the Quai d'Orsai which formed the Rue des Nations, and to employ them as museums of a different class to any existing in Paris. The first question which had to be considered was whether the buildings were capable of enduring for a period of, say, ten years. The advice of M. LEWIS BONNIER, the architect, was sought, and he concluded that with the exception of those representing Italy, Spain, Turkey and Servia the pavilions might be considered as of sound construction. Spain happens to be in the middle, of the row, and its removal will make a gap. But the Finland pavilion, which is interesting, is to be removed and take the place of Spain. In most cases there will be no purchase money necessary. In any case it is assumed an outlay of 1,000,000 francs may take place. In utilising the buildings it is proposed to establish a Museum of Comparative Education in the United States building. In the Austrian Palace will be an exhibition of international exhibitions between 1798 and 1900. The Hungarian Pavilion will be assigned to the history of civilisation. The Belgian building, which was a reproduction of municipal buildings at Oudenarde, will probably be used as a museum of public art. The Norwegian Pavilion will contain objects relating to navigation and marine exploration. The German building will be illustrative as far as possible of learned societies. The Swedish building will be converted into a museum of manual instruction, and Greece, if it can be retained, will be a fitting place to exemplify recent discoveries in Classic archæology. Irony is strong among Frenchmen, and it has dictated that peace should have a special exhibition, for which the Bosnian building is supposed to be eligible. Finland will be appropriated to geography, and Monaco to oceanography. Great Britain's mansion is to be reserved for sanitary science and bacteriology, and the great work initiated by PASTEUR and Lord LISTER can there be studied.

THE usual appearance of English brickfields is so sordid, no architect who has visited them can be surprised when he hears strange stories about the men who labour in them. There is, however, no necessity why a brickfield should necessarily present an aspect of prehistoric savagery. Messrs. EASTWOOD & CO., Limited, who have done so much to improve the qualities of bricks and ameliorate the condition of workmen, have resolved that their fields shall be at least not unworthy of the great art of building. On Friday last they were able to present to the view of a great many representatives of architecture and the building trades a series of admirable illustrations suggestive of what the brickfield can become. They show what a desire for excellence can accomplish when guided by good taste, and every one who loves rural scenery will be glad to see industry carried out which will not appear to be out of keeping with the landscape through which the Thames and Medway flow.

LAW IN TASTE.

A SERIES of lectures on "Law in Taste," by Mr. Courthope, the Professor of Poetry at Oxford, has been in course of delivery for some little time past, and the last was heard on Saturday. As was to be expected, the greater part was devoted to taste in literature. But with a subject of the kind there can be no hard and fast limit laid down, for in all ages it has been found that what is applicable to literature is not irrelevant in treating of painting, sculpture and architecture, and any conclusions relating to the three fine arts can also be referred, with some fitness, to creations in poetry and prose. The universality of what is known as "Law in Taste" makes many people believe that taste can only be something very vast and therefore very hazy, and cannot in consequence be of much service to those who would avail themselves of any advantages that the law might be supposed to confer on producers of works of art.

Professor Courthope evidently recognised the great difficulty of grappling with the conditions of something which resembled the ghost of King Hamlet in its elusiveness, for it seems to be apparent in different points, to be invulnerable and to vanish when communication is most desired. The Professor endeavoured to give definiteness to what has so much unsubstantiality about it by referring to precedents when at the end of a century an effort was made to describe its characteristics. He also adopted the period of his own experience in Oxford as a sufficient space in which to exemplify the variations which have occurred in taste. In the sixties and seventies he found Stuart Mill in power as a philosopher and Wordsworth as a poet. But the early essays of Mill showed that he had a weakness for emotional literature, and such essays as those on Coleridge and Poetry in the *Westminster Review* were as little to be expected from a representative of utilitarianism as at the present time a descriptive poem in many cantos on the scenery of South Africa would be thought the fitting expression of the musings of Lord Kitchener. Mr. Ruskin made it known that if he condescended to point out the weakness of Mill's economical principles, it was owing to the sentimentality which occasionally detracted from the rigid principles which are usually connected with supply and demand, and proved Mill to belong to non-philosophic humanity. Schopenhauer is now more influential among students at Oxford than Stuart Mill, while Verlaine and other Paris decadents are supposed to express the poetic spirit which inspires the world at the close of the century.

As long as men have been recording their thoughts about taste we find similar changes, and it may be declensions. Ephraim Jenkinson captivated Dr. Primrose by a little pedantry concerning cosmogony. But that ingenious gentleman could, we may be sure, have produced a list of the numerous men who have tried to be lawgivers about callology, or the science of the beautiful, and each of whom believed he possessed the only legitimate system. A subject which men so varied as Plato, St. Augustine, Cicero, Bacon have treated independently, and in more modern times Reynolds, Burke, Lessing, Winckelmann, Schelling, Hegel, Goethe, Hume, Alison, Kant, Sterling, Ruskin, &c., cannot easily be considered as receiving an exhaustive treatment. But the human mind naturally desires to see things investigated in a complete manner. Although imperfect, Euclid's books still retain their authority among geometricians, and to many it seems strange that the laws of a subject like taste cannot be established once for all on equally durable foundations.

It is no less remarkable that all who formulate laws of taste adapt themselves to what is desired and express their opinions with as much confidence as if they were all Euclids. It will be shown that each newly-evolved law is applicable to all times and is exemplified by the greatest artists, and that all who deviated from it on that account were failures. Mr. Ruskin was the latest example of a writer who assumed unlimited infallibility, and in his judgments was as regardless of greatness as Dante himself. As the Italian poet made no scruple about dooming to eternal torments men who deserved to be considered as virtuous, Mr. Ruskin was no less pitiless in classifying as reprobates artists who had merited renown. Both Dante and Ruskin believed they were inspired by a love of justice alone, and their conclusions were supposed to be as free from any taint of their own individuality as those of a geometer. What they uttered were announced as the impersonal expressions of eternal justice. On reflection it does appear impertinent for any weak mortal to speak as if he were the voice of the universe and everlasting truth, but it is a very old weakness and has appeared in other matters as well as taste. It is not realised that the most a man can do is to express his own individuality, which in many cases, it may be remarked, is not worth expression, and the theories, or as some call them, laws, are doomed to have as brief an existence as the being who first enunciated them.

There was a time when men like Dante and Ruskin were supposed to be the announcers of inspirations, and were independent and unaffected by their peculiar circumstances. But in our days we cannot accept such an origin of ideas unless under very few and extraordinary conditions. If Dante had lived in any other city than Florence, where, from the conditions of business, there would be no opportunity of charging him with peculation, usury and other crimes connected with the unfair acquisition of property, he might have been less soured by what he saw around him, and have taken a brighter view of things in general. In the same way, those who were acquainted with Mr. Ruskin in his early manhood anticipated a very different career for him; the causes which subsequently made him discontented in life being then unknown and remote. Legislators on æsthetics cannot remain unaffected by the circumstances in which they live, and those which are trivial may be as operative as those of the highest political consequences. But as all external circumstances are only temporary, we can hardly expect that anything they inspire will be of interminable duration.

Professor Courthope showed the relation between Chaucer, Milton, Byron and Tennyson, and their surroundings, as exemplifying the tendency of taste in different ages. But then the question came, How could those relations and surroundings have an influence on later men? The Professor believed that the existence of great poets and great artists led to the adoption of authority as a principle in production. In literature certain writers are constituted classics, and they become models which it is considered desirable to recognise. In the same way certain buildings, statues and pictures can be regarded as authoritative examples. But it is very hard to determine the extent of the influence which those works of art or literature can exercise. Serious attempts at the imitation of a great original may be more degrading to it than any caricature. Chaucer's language is too far removed from that of the nineteenth century to allow of too close copying. A man like the late William Morris was no doubt right when he claimed Chaucer as his master, but an ordinary professor of literature would have no easy task in pointing out the exact limits of indebtedness. A few religious people attempted the composition of poems in a style they supposed was Miltonic. But as compositions they were no nearer to the originals than Milton's translations to the Psalms of David. No poems were more often imitated than Pope's, but the spirit of the originals was seldom, if ever, caught, and the consequence has been Pope and his imitators have been classed together, and the master has suffered through the dull wits of his admirers. In Byron's case those who accepted him as an authority to be imitated were only able to work themselves into sham passions, and, as in Pope's case, brought discredit on a force which, if undisciplined, was powerful. Good sense has prevailed in our time over writers, and from the few who have attempted to cope with him Tennyson might be considered as inimitable.

Although an æsthetic law such as Professor Courthope describes can be deduced from the works of the poets which are selected as representing authority, we must say that the direct influence upon other writers is not so apparent as he assumes. Instead of being examples of cause and effect they generally are instances of classification. If William Morris had not stated that he was a pupil of Chaucer, somebody might have perceived traits which were common to the old and to the modern poet, and the latter would therefore be declared to derive much from the ancient clerk of works, although it might not be known that he had read the "Canterbury Pilgrims." So much is this the case, it is unwise for a modern writer when he is said to imitate another of an earlier time to deny the allegation. For in that case imitation, although only supposititious, becomes larceny, and is thought to be aggravated by ingratitude and untruth. But apart from imitation it is often doubtful whether the assumed authority has been effective. For instance, a great many people are confident that Sir John Millais was indebted to Mr. Ruskin's writings for much of his art and his peculiar way of looking at and representing natural objects. But there is no evidence to support that theory. Millais had fixed on the style which provoked so much opposition among contemporaries before Mr. Ruskin announced his canons of art. As a champion of a cause that seemed to be forlorn the writer was invaluable, but he did not then teach how pictures should be painted and have the characteristics of Millais. It is likewise worth remembering that not one of the lovers of grand art who condemned Millais's pictures was less acquainted with the laws of taste as expressed in books than the painter. He was essentially a portraitist, and a pretty face, a deserted garden, a lonely lake, or a glimpse of a common were seized by his imagination and converted into pictures with an effect that was not derivable from any books. Millais was not a reading man, and although his paintings can be used to demonstrate principles, no writer on art in the nineteenth century can claim to have had any share in his education.

A university professor is from his office obliged to act as judge with students who in literature or the arts may not have sown their wild oats. Professor Courthope said he had observed in the essays submitted to him a failure to treat the subject as a whole, a tendency to put style above thought, and to prefer points and epigrams to perspective and proportion. This love of picturesque and attractive bits shows the affinity between the works of literary and architectural students. Indeed, many buildings are now supposed to be made up of a few piquant fragments, which are enhanced by the plainness or prosiness of the greater part of the composition. But there is no reason why that principle of composition should be tabooed. Beauty can become wearisome when there is too large a quantity of it, and in the world around us we see much which is commonplace and uninteresting. Contrast is desirable in whatever is to produce artistic effect. There are buildings in which a long stretch of plan wall surface is not out of place. But then in universities and colleges art and literature are not considered from the point of view usually taken by ordinary men, and consequently we have attempts to produce "laws" which, however excellent, are not adapted to the circumstances of life, and will not therefore bear the test of everyday experience. Let the artist follow the behests of his nature, and no matter whether he is called a decadent or a Philistine his work is sure to have its use, and may be more pleasing and elevating to the majority than if laws of taste were to be recognised in every part of it. Let the artist be a law to himself and leave the æstheticians to demonstrate all the transformations of taste.

INFLUENCE OF FRENCH ARCHITECTURE IN AMERICA.

We lately pointed out when noticing a series of drawings of buildings erected during the Georgian Period in America, how at one time the architecture of England and America was almost identical, and in the South especially the English feeling appeared to be stronger than in some districts in this island. The Revolution made a difference in the relations between the two countries, but it did not much lessen the use of English models of buildings. Subsequently political and other influences have occasionally more or less estranged Americans from Englishmen, but there is a sense of satisfaction that the good feeling between the two peoples was never stronger than at the close of the nineteenth century. It cannot be said, however, that modern English architecture holds the same power over the American mind as formerly. There is, apparently, still an affection for country houses of the old-fashioned English type, and our country churches also seem to possess admirers among clergy and congregations. But the more important buildings, whether for public purposes or the residences of millionaires, appear to be derived from French rather than English examples. This is frankly acknowledged by Mr. Ernest Flagg, who in the last number of the *Architectural Record* describes the situation in the following remarkable passage:—

> Our young men go to Paris and become convinced of the wisdom of the French methods. From the great masters of the French school, under whose influence they are brought, they imbibe such logical, reasonable and convincing instruction that I do not believe it possible for a young man anxious to learn to come away unconvinced. The converts which these men make after they return among the young men who themselves are not able to go abroad are as ten to one. A revolution is in full progress among us, and it is beginning just where it ought to begin, that is, with the students. Let no one mistake the introduction of what appears to be modern French architecture as only a passing fancy to go the way of the "Richardsonian Romanesque," "Queen Anne" and "Italian Renaissance." It is an entirely different affair. It means much more than appears on the surface. The French resemblance is only an incident; it may, indeed, soon pall and pass away, but the movement means that the principles which the French use are being introduced here, and these will last because they are founded on good taste, guided by common sense. Henceforth American architects are to be properly instructed before they enter upon their duties. American architecture is not to be "Frenchified" unless France can dominate the fashions of the world in building by her taste and skill, as she has dominated them in dress. The movement means that our architects of the future will apply to the art in this country the same logical reasoning, and that they will have the same careful preparation for the work that helps the Frenchman to lead the world in the fine arts. It also means that in the future the whole body of American architects are to work together along the same lines—to think in the same style. Thus we are about to enter upon a course which will make possible the evolution of a national style of our own, or perhaps enable us to set the fashion for the world.

Mr. Flagg's words do not exaggerate the influence of French teaching. When, as was pointed out by some French architects *apropos* of the late French Exhibition, the successful architects in the most recent international competitions, the Californian University being one, are found to be students of the Ecole des Beaux-Arts and other schools in France, it must be expected that students of architecture who wish to be no less successful hereafter will endeavour to gain the advantages of a similar training. It is remarkable also that as a rule foreigners appear as amenable to the teaching of the French artists as natives. There can be no jealousy in the instruction given. Frenchmen are not afraid that an American or a Russian will seek architectural commissions in France, and the majority of foreign painters and sculptors who live in Paris depend for support on their own countrymen. The fear of creating future rivals does not trouble any of the "patrons" who direct ateliers in Paris. We have therefore the remarkable spectacle that in regard to the fine arts the Quartier Latin continues to be what it was in Mediæval times, when the scholastic arts were omnipotent and students came to study them from all parts of civilised Europe.

It may be said that the love for such types of the Renaissance as are popular with the French professors of architecture, and which Americans esteem, is only one of those caprices to which many modern races are subject. The Americans, as is evident from Mr. Flagg's words, are too shrewd to ignore that law of mutability which is strongest apparently in the arts. They would, no doubt, prefer a style which was less directly derived from Paris and the antique world. Richardson's Romanesque could not be considered as an American inspiration, but the little that was personal in it was welcomed with delight, and we suppose there are amateurs who believe that Richardson will be entitled to stand on the same plane as Edison as an American inventor. But as French architecture is believed in the States to be the best that exists, it is seized in the hope that with its aid something will be devised which will be more true to the western continent. That French buildings are not judged with a blind partiality is shown by the "Text Book of the History of Architecture" and other writings of Professor Hamlin, of Columbia College. He does not hesitate to say that at Versailles the results are incommensurate with the outlay—that the orders are used with singular monotony, that there is no controlling or dominant feature, no adequate entrance or approach, that the staircases are badly placed and unworthily treated, and the elements of the plan are combined with singular lack of the French sense of monumental and rational arrangement. Of the architecture of Louis XV. he says:—"The exterior designs of this time were often even more uninteresting and bare than under Louis XIV.; while, on the other hand, interior decoration tended to the extreme of extravagance and disregard of constructive propriety. Contorted lines and crowded scrolls, shells and palm-leaves adorned the mantelpieces, cornices and ceilings, to the almost complete suppression of straight lines." Coming to later works, we find the Paris Bourse described as dignified but uninteresting. The conception of Garnier's Opera House is said to be not entirely original, for its façades may be traced back to the façades of St. Sulpice and the Garde-Meuble. The church of St. Augustin in Paris is thought to be wanting in dignity and sobriety, and the emphasis of the meagre ironwork is unpleasant. La Trinité is considered to be "internally suggestive of a music-hall, and marked by a lack of sobriety and reserve which destroys its churchly dignity. The Sacré Cœur at Montmartre is vast, ugly, costly and splendidly built." The Professor sums up the qualities of various modern manifestations of French art in the following brief but severe judgment:—"During the last ten years or more a new and pernicious influence has manifested itself in French architecture. The Parisians have grown weary in well-doing, or, rather, the pursuit of progress and improvement has degenerated into a chase after the ignis fatuus of originality. They have got tired of the monotony of their architecture, and have sought the remedy precisely where the anarchists have sought a refuge from the monotony of the restraints of the social order—in the negation of all restraint. The result has been in most cases the substitution of rank ugliness for the Classical proprieties of the formerly prevalent style, and the perpetration of innumerable outrages against common sense."

Students who are admonished so decisively by a teacher are not likely to deem everything to be perfect which the French produce. A very short experience in the architectural classrooms of an American college is sufficient to warn the student that he has to be on his guard in following French precedents. But, knowing the dangers, he can with safety to himself accept the systematised instruction in the art of architectural composition which is offered by French professors. In England we have a belief that in a treatise on one of the arts everything which is necessary is sure to be found. That is an error. There is much which is important that somehow always escapes when instruction is offered by printed chapters. The information may appear trifling, but to a student it may be most essential, especially in certain periods of his career. Oral instruction is not yet superseded, and as it can be made to suit a student's requirements with the utmost exactitude, it is generally likely to prevail. Much of the success of the French system of instruction in art is owing to the skill by which all difficulties are discerned, and what power the student requires to overcome them is furnished at the right moment and in the right manner.

If results are to be taken as the tests of influence there can be little question that American artists have gained much by their respect for French methods. When we consider how short is the time since the architects of the United States turned their attention to Paris, the excellence of the American buildings which are French Renaissance in style is remarkable. The late Richard M. Hunt was, we believe, the first American who received instruction at the Ecole des Beaux-Arts, and he was the first to reproduce or adapt modern French buildings in American cities. What has been done in the brief period of forty or fifty years must go far to persuade students and lovers of architecture that no other system of instruction in art is comparable to the French. Whether in the future the same rate of progress will be kept up is a question which can be only treated in a speculative manner, but the experience of the last half-century justifies the Americans in taking the sanguine views which are now prevalent about the future of architecture in the United States, when it is supported by the fostering powers of French masters and the inspiring examples of French buildings.

THE ARCHITECTURAL ASSOCIATION.

A MEETING of the Association was held on Friday evening last at 9 Conduit Street, W., Mr. W. H. Seth-Smith, president, in the chair.

The following were elected as members:—Messrs. R. P. Jones, F. J. McIlwraith, P. W. Mulready, J. M. Pilkington and S. N. Simmons.

Mr. A. T. Walmisley delivered a lecture entitled:—

The Use of Rolled Joists in Construction.

The lecturer began with an allusion to diagrams exposed on screens, and explained to the meeting calculations and formulæ proving the moment of inertia and the moment of resistance in tensile and compressive stresses. These trials showed that in proportion to the number of horizontal sections taken, the nearer to the truth would be the result. He then said:—

The late Sir William Siemens, addressing the Iron and Steel Institute in 1877, stated that the use of steel for structural purposes could only be said to date from the year of the Great Exhibition of 1851. Its manufacture is now well understood. It is found to be of complex structure, and not the homogeneous mass it is often supposed to be. Addressing the Iron and Steel Institute this year (1900), Sir William Roberts Austen stated that "in 1,000 parts of steel, 997 parts, more or less, may be iron and the rest carbon," but that the result of the union is a metal that is more widely used and has more varied attributes than any other material.

The interdependence of small percentages of matter on the larger masses in which such minute contributions are hidden is one of the chief studies of metallurgists of the present day, and the chemistry of steel shows the effects produced by the existence of phosphorus, silicon, manganese and sulphur in the material, rendering some kinds of steel comparatively soft, while others were extremely hard. The mode adopted for either rapid or slow cooling was seen to have an influence. The committee appointed by the Board of Trade to inquire into the loss of strength in steel rails through use on railways, consequent on the St. Neots accident of December 10, 1895, after four years' labour in their report issued this year, state that, as regards chemical composition, they do not think it desirable to insist upon too high a proportion of carbon, manganese or silicon in the steel, having regard to the ordinary contingencies of manufacture and the greater susceptibility of high carbon steel to thermal influences, but beyond giving tabular results of investigation of individual specimens, the committee, while establishing the conclusion that the evidence is not sufficient to justify a decisive verdict respecting percentages, nevertheless insist on the importance of securing as low a proportion as possible of phosphorus, sulphur and silicon in steel which is to be manufactured into rails, and these precautions would apply in a similar way to rolled joists.

The St. Neots rail was a Bessemer steel (80 lbs. per yard) bull-headed rail, laid in 1873 on the Great Northern Railway up line, and transferred to the down line after thirteen years' service on the up line during repairs at some date not recorded. Its failure may have been due to local stresses unavoidable at the joints and independent of the chemical composition of the steel, but which joints need constant inspection.

Although iron does not combine with carbon at ordinary temperatures, yet the union may be effected when brought into contact at a red heat. Mild steel containing a proper percentage of carbon is produced by the Bessemer as well as by the open-hearth processes both with either acid or with basic lining to the convertor or hearth. The open-hearth process is more under control and gives more time to adjust the composition than the Bessemer converter, and hence is generally preferred. In the Bessemer or pneumatic process molten pig-iron is blown through, the carbon and other elements burned out, and then the desired proportions of carbon and manganese are added, and the whole process is over in, say, twenty minutes. Hematite pig-iron is used in connection with acid linings. With silicious linings, such as ordinary fire-brick, basic slag would combine with it and eat it away. Calcined magnesian limestone is generally used for a basic lining, and hence the process is called basic. We have the treatment of pig-iron with certain classes of iron ores without the addition of scrap, according to the direct open-hearth process of the late Sir Wm. Siemens, and the fusion of a mixture of pig and scrap iron or scrap-steel in the open-hearth process of Messrs. Siemens-Martin, in which the steel is dead melted, and the process allows time to draw samples for testing and time to doctor up the mixture as required. Pig-irons containing but little carbon or silicon are preferable for the open-hearth process. Phosphorus aids cold shortness, *i.e.* breakage cold and unexpectedly, while sulphur aids red shortness. A deficiency of silicon results in inferior metal. Only the purer kinds of pig-iron can be operated upon in silicious or acid-lined furnaces, while with basic linings more impure phosphoric pig-irons can be used, and the slag of the basic process contains from 10 to 18 per cent. of phosphoric acid, which is ground up for use as a fertiliser. The higher the carbon the higher the tensile strain. This can be regulated in the open-hearth process without expense. For thin material the carbon is kept low, and for thick material it is kept high. The operation of rolling hardens it. The sulphur and phosphorus should be below ·06 per cent.

Messrs. Dorman, Long & Co. (Middlesbrough) adopt a proportion of between 0·16 and 0·25 per cent. carbon in their steel by the Siemens-Martin process. Owing to the supplies of the best hematite ores becoming scarce, the quality of this kind of ore is inferior to what it was a few years ago, and it is very difficult to keep the sulphur and phosphorus below expedient limits. This is one of the reasons which has led Messrs. Dorman, Long & Co. to adopt the manufacture of steel from Cleveland iron, the phosphorus being eliminated by lime and the sulphur by calcium chloride. They find that they are able to obtain better results than they could with the old hematite iron, and by keeping records of frequent analyses, and having meanwhile the furnace under control, they supply the sections which give satisfaction.

At the Earl of Dudley's Round Oak Iron and Steel Works, Brierley Hill, they adopt the basic open-hearth process, and can produce anything from ·1 to ·3 carbon that punches cleanly and works satisfactorily. The Shelton Iron and Steel Company also adopt the basic open-hearth process.

A large number of joists used in construction are too shallow. The proportionate depth to the span should be one-twelfth, but should never be less than one-twentieth of the span. The tendency to deflection obviated by the use of two joists could be better provided for by the adoption of a made-up girder with angle-irons and plates in which the metal of the double centre could be transferred to the top and bottom flanges. When girders have to carry a floor to which a plastered ceiling is to be suspended, comparative stiffness is indispensable to prevent sagging and the consequent cracking of the plaster, and should be designed under such circumstances so that the deflection does not exceed one-thirtieth of an inch per foot of span, but this ratio might even be reduced with advantage. Makers' catalogues show the sizes and weight of joists kept in stock, and in some cases add the safe distributed loads over various spans for each joist, but do not state the breaking-strain assumed, or if they do give this they do not add the factor of safety taken to arrive at the amount of stress per square inch. Hence it is not generally fair to say that because one list gives higher loads than another list that the joists are superior. In each case the designer must determine the safe working load for himself, and see that both the flanges and the web are each capable of sustaining their due proportion of strain.

The joists sometimes come in from the mills not as true as one could wish, the flanges not being parallel. This is more noticeable in the wider sections, the 8 inches by 6 inches especially. Such wide sections, also 9 inches by 7 inches, are more suitable for stanchions than girders. When a wide dimension is needed for girder work, for the support of a wall or other purposes, two rolled joists are introduced, thus adding top and bottom flange plates to form the connection, and having the theoretical corresponding thickness of web that would be equivalent to the work of ordinary flange plates. As a rule, in single joists the width of the flange should be sufficient to resist flexure in a horizontal, plane or lateral bending. When the boom is of insufficient width the girder will fail by the lateral deflection of the top bay or boom rather than vertical buckling.

Professor Rankine has deduced the following formulæ for the ultimate strength of the top booms of small girders as regards resistance to lateral flexure:—

$$t = \frac{f}{1 + a r^2}$$

where t = the ultimate average thrust per square inch upon the flange area.

r = the ratio of length of flange to width.

f = 16 tons per square inch or such other value to suit the material in use.

a = a constant which equals one-five-thousandth for a flat boom.

When more than a single girder is employed, if the circumstances are such as to admit of the flanges being braced horizontally together like a horizontal lattice girder, not only material may be saved, but the advantage of the inside surfaces of the girders that are so connected is secured for inspection and for facility of forming the connections.

Generally speaking, the width of the upper flange of a girder, when not stiffened laterally by additional connections, should be one-thirtieth to one-fortieth of the span, so that if the depth is assumed as one-twelfth of the span, the width would be two-fifths of the span, showing that if the usual stock sizes be taken of 10 inches by 5 inches, or 12 inches by 6 inches, the proportion of half the depth for the width of flange is ample. The width of the lower flange needs to be such as will give a proper bearing on the piers, or if the beam is suspended from the top flange a sectional area to resist the tension produced by the loads. It is useful to remember that in long girders the web of a joist is more likely to fail near the points of support than in the centre, not only on account of the action of shearing strain, but on account of the conditions of rolling. Hence at the works it is found well to crop off the ends after rolling long lengths so as to obtain a more uniform strength of section throughout.

In connecting rolled joists at right angles to one another, when one is "machine special notched," a good distributing bearing for the transverse joist upon the lower flange of the longitudinal joist is secured at the connection; in the former the web only is cut, in the latter the flange to secure the desired bearing.

In considering bearings, girders should rest on a wall, and not merely upon a pier attached to a wall. The writer (A. T. W.) has seen girders resting upon what appeared like a pier in plan, but which had simply been brickwork corbelled out. The pressure upon the brickwork in contact with the under surface of the stone is communicated by the joints in the brick wall, so that the width of the pier is strengthened by the continuity of the wall. The higher the wall the less the pressure from the girder upon the ground.

Where joists rest on timber, masonry or brickwork, bearing plates are invariably introduced to distribute the weight, and such plates should be thick enough to countersink the rivets of attachment to the joists on the under side of the bearing plates. When such plates are set back from the front edge of the wall or stone on which they are placed they exercise the same effect as chamfering the edge of the template.

In the Paris Exhibition of 1867 a rolled beam was exhibited measuring 1 metre (39⅜ inches) in depth, 10 metres (33 feet) in length, and weighed 2½ tons. This beam, instead of being rolled in the usual way, was subjected to the pressure of four rollers, by which process the quality of the iron in the flanges was preserved as well as that of the web.

The Carnegie Steel Company roll a beam 24 inches by 7 inches to 80 lbs. per foot and moment of inertia = 2,087. Their joists generally present a good finish free from surface imperfections and straight. The American joists seem to contain a slightly larger amount of phosphorus in their composition than the British manufacture. They give, for example, a test of 0·08. Ours is about 0·06. The Americans have practically discontinued manufacturing acid open-hearth steel and make only basic steel, which they assert to be purer chemically. The American joists are at present cheaper than the English, but this, of course, is only peculiar to the moment.

French joists to a reasonable specification are fairly satisfactory, but are not much cheeper than our own when the cost of carriage is added. They adopt the Siemens-Martin basic system. There is nothing fixed for the percentage of carbon, phosphorus, silicon, manganese, or sulphur. Tests are applied by the engineer during use to test hardness and other requirements. They specify 32 kilogrammes per square millimetre, with an elongation 8 per cent. for iron and 42 kilogrammes per square millimetre (26·6 tons per square inch) for steel.

The first national work in this country in which foreign iron was employed was the Natural History Museum, South Kensington, about the year 1869. The term "Belgian joist" is a generic term, as joists are made in France and Germany as well as in Belgium, and sold as foreign joists.

Results of 1,200 *Tests of Foreign Steel Joists.*

Limit of elasticity	Maximum,	69·0 %
	Average,	64·1 %
	Minimum,	60·0 %
Ultimate stress in tons per square inch	Maximum,	29·1 tons
	Average,	28·08 ,,
	Minimum,	27·2 ,,
Elongation per cent. in 8 inches	Maximum,	28·0 %
	Average,	24·39 %.
	Minimum,	20·5 %
Reduction of area per cent.	Maximum,	60·2 %
	Average,	50·53 %
	Minimum,	42·4 %

The above were German manufacture. Observe how even are the results recorded, due probably to the fact that the Germans are good chemists.

As to British, German, Belgian and American make, all these countries have manufacturers whose output is thoroughly good and reliable. There is no difficulty in obtaining foreign material that will stand the required tests, and the result of foreign competition has been that many of the British rolling mills who roll joists are now better equipped than formerly. At the same time, the foreign ordinary commercial joist delivered into this country, from Belgium in particular, is not a good joist, and frequently in some foreign joist the web is thickened to obtain the weight at the expense of a minimum flange. It must be remembered that wrought-iron does not flow like cast-iron, and it is difficult to get the material pushed up in rolls where the flanges are wide compared with the depth of joists. Iron joists are generally of greater sectional area than steel. They are the same depth and width, but weigh more per foot run on account of sectional area. Thus iron joists weighing respectively 56, 35 and 13 lbs. for 12 inches by 6 inches, 10 inches by 5 inches, 5 inches by 3 inches weigh in steel 44, 30 and 11 lbs. per foot run.

Railway companies, for patriotic reasons, and more particularly for the benefit of their traders, usually insert a clause in their contracts that all materials provided by a contractor are to be obtained from traders who give their traffic to the company, and conveyed over the railways and canals (if any) belonging to the company. The manufacture depends mainly on the specification, and therefore both British and foreign steel may or may not be good, as the material known as mild steel may have almost any strength between that of hard steel and that of wrought-iron.

The committee on the use of steel in railway structures appointed by the Board of Trade to consider the practicability of assigning a safe coefficient reported in 1877 that the steel employed should be cast steel, or steel made by some process of fusion, subsequently rolled or hammered, and that it should be of a quality possessing considerable toughness and ductility, and that a certificate to the effect that the steel is of this description and quality should be forwarded to the Board of Trade by the engineer responsible for the structure. Also that the greatest load which can be brought upon the bridge or structure, added to the weight of the superstructure, should not produce a greater strain in any part than 6½ tons per square inch.

As in the use of mild steel the extension per ton per square inch is practically equal to the compression, it follows that the neutral axis of a section of steel strained transversely will be in the centre of gravity of its section; but as in wrought and in cast-iron sections the unit stresses, particularly in the latter, vary in the case of tension and compression. The moment of inertia may be calculated from a neutral axis not coincident with the centre of gravity.

The qualities required in a steel or iron structure being chiefly of a mechanical nature, it is reasonable that the test should be mechanical, and, provided these tests are satisfied, the beginner does not trouble himself about the chemical constituents. Tests are provided to detect brittleness and to secure toughness, combined with ductility, malleability, and the result of experiments shows that the tensile resistance and limit of elasticity are the main objects of inquiry.

Tensile strength 27 tons to 31 tons per square inch ultimate with elongation of 20 per cent. in 8 inches lengthways and crossways of the same.

Specification for mild steel plates and sheets as adopted by the Great Western Railway Company :—

1. All plates to be of British manufacture.

2. All plates and sheets to be of the exact dimensions ordered, and to be uniformly throughout of the thickness specified.

3. All plates and sheets to be flat and free from blisters, scale, laminations, buckles and all other defects.

4. All plates and sheets to be of such quality as to weld perfectly.

Strips cut lengthwise and crosswise to be capable of standing the following tests :—

Tensile Test.—Ultimate tensile strength to be not less than 24 tons nor more than 28 tons per square inch, with an elongation of at least 22 per cent. when the thickness of the sample is more than five-sixteenths of an inch, and with an elongation of at least 20 per cent. when the thickness is five-sixteenths or less; elongation in each case to be measured over a length of 10 inches.

Temper Bending Test.—Strips 1½-inch wide, heated uniformly to a low cherry red and cooled in water of a temperature of about 80 deg. Fahrenheit, to stand bending in a press to a curve the inner radius of which is equal to the thickness of the plate.

Cold Bending Test.—Strips 1½-inch wide to stand bending cold in a press to a curve the inner radius of which is equal to the thickness of the plate.

Punching Test.—The material to be tested for ductility by punching cold a group of holes five-eighths of an inch to three-quarters of an inch diameter, the edges of which shall not be more than three-sixteenths of an inch apart.

All mild steel rivet, channel, angle, T and other bars to be of such quality as to weld perfectly, and to have an ultimate tensile strength of not less than 24 tons, nor more than 28 tons per square inch, with an elongation of at least 25 per cent., measured over a length of 10 inches.

All rivet bars to be rolled exactly round to gauges to be supplied by the railway company.

The material to be tested for ductility by being bent cold under a steam hammer, thus :—

Channel bars, Zed bars, same as angles.

Angle bars { One end opened
the other closed

Joists

Tee bars

Also by punching cold a group of holes five-eighths of an inch to three-quarters of an inch diameter, the edges of which shall not be more than three-sixteenths of an inch apart.

Rivet bars, in addition to the tensile tests, must stand bending double, both hot and cold. The head heated to redness must stand flattening until its diameter is three times the diameter of the bar without cracking at the edge.

1. All wrought-iron plates, sheets and bars to be of British manufacture, tough, fibrous and of the highest smithing quality.

2. All plates, sheets and bars to be of the exact dimensions ordered, and to be uniformly throughout of the thickness or section specified.

3. All plates, sheets and bars to be free from blisters, scales, laminations, buckles, twists and all other defects. All plates and sheets to be flat.

4. All plates, sheets and bars to be of such quality as to have an ultimate tensile strength of :—

	Tons per sq. in.	Elongation.
Round and square bars and flat bars less than 6 ins. wide ...	23	with 20 p.c. in 10 ins.
Angle, tee, channel and H bars, and flat bars over 6 ins. wide	22	with 12 p.c. in 10 ins.
Plates with the fibre	22	with 10 p.c. in 10 ins.
Do. across the fibre	18	with 3 p.c. in 10 ins.

and to admit of bending round a radius equal to the thickness when hot through an angle of 125 degs. with the grain, and 100 degs. across the grain, and when cold as follows :—

Thickness of plates, 1 and 15/16, 7/8 and 13/16, 3/4, 11/16, 5/8, 9/16, 1/2, 7/16, 3/8, 5/16, 1/4, 3/16, 1/8 and 1/16 inch.

With the grain, through an angle of 15, 20, 22½, 25, 27½, 30, 35, 42½, 50, 60, 70, 75, 85 and 95 deg.

Across the grain, through an angle of 5, 7½, 10, 10, 12½, 12½, 15, 17½, 20, 25, 30, 30, 40 and 50 deg.

5. The whole of the iron to be inspected and tested before leaving the manufacturers' works.

The Carnegie Steel Company, of America, specify for structural steel an ultimate strength of 60,000 to 70,000 lbs. (26·78 to 31·24 tons) per square inch.

Elastic limit, not less than one-half the ultimate strength. Elongation, 22 per cent.

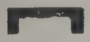
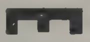
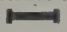
Bending test, 180 deg. to a diameter equal to thickness of piece tested without fracture on outside of bent portion. The elongation shall be measured on an original length of 8 inches, except when the thickness of the finished material is five-sixteenths of an inch or less, in which case the elongation shall be measured in a length equal to sixteen times the thickness; and except in rounds of five-eighths of an inch or less diameter, in which case the elongation shall be measured in a length equal to eight times the diameter of section tested.

The London and North-Western Railway Company specify that all steel shall be of British manufacture, produced by the Siemens-Martin open-hearth process, and of such quality as to withstand the following tests :—

Ultimate tensile strain not less than 28 tons per square inch, contraction of area at fracture for same not less than 40 per cent., extension in a length of 10 inches not less than 20 per cent.

Some authorities prefer to take the elastic limit rather than the ultimate strength of the material, but as they then employ a proportionately smaller factor of safety, the result is practically the same.

Stanchions.

It requires no long description to prove that a long and slender column always gives way by bending, but the reasons are not clear until we consider the question in a negative form and inquire why it should not bend. A slender rod with rounded or hinged ends may bend like a bow, and the lateral resistances opposed to such bending will be similar to the vertical resistances offered by a rod supported at both ends over a free span when laid as a beam and loaded. In the latter case we know that the deflection is proportional to the amount and disposition of the load, so that to produce a great deflection we have to introduce a proportionally great load, the elastic resistance of the beam bearing a definite ratio to its deflection. In a solid block, viewed as a short column free from flexure, the element of compressive stress only prevails, and in a long column fixed at the ends the reasoning is again modified by the points of contra-flexure that have to be considered. In every material the strength diminishes rapidly as we advance from short to long columns, but the reduction is more conspicuous in the cast-iron and the strong steel than it is in the softer metals. In the case of free ends cast-iron is only economical up to 3½ diameters and for ends fixed up to 7 diameters, while for heights exceeding this ratio mild steel is preferable to the use of either cast or wrought iron. In further considering the question of flexure in an upright column, there being no apparent transverse force to produce the bending, the result can only be caused by the ends tending to approach one another, and the condition of things resembles the action of a bow in which the ends are united by a member in tension, so that if we can determine the tension produced in the member uniting the ends we shall have found the resistance that the bent column opposes to the load on its head. This evidently must depend more upon the elastic stiffness of the material and the dimensions of the columns than upon the crushing strength of the material. The form of the section is important, and a rolled joist section is preferable to the channel  or  section sometimes employed with its web or back placed against a wall, because the compressive stress is more equally distributed over its section. An open or  section also has this advantage for use as a stanchion compared with a round, hollow column, that the whole surface can be seen and its thickness checked without the need of drilled holes to prove that the thickness is uniform.

A slender column is naturally a very weak one, and in order to obtain a satisfactory adoption of its introduction in a structure we must provide against the action of flexure, which is the source of its weakness. This may be effected by the same means as in a girder, namely, by removing the metal from the centre and placing it as far away from the axis of the stanchion as possible. By the adoption of four separate legs braced together like a lattice-girder we may so develop the material in a filamentary form as to considerably increase its efficiency. In a stanchion of any section the resilient force is proportional to the modulus of elasticity, but is independent of the ultimate strength of the material. Thus a long stanchion of the strongest steel would vary little from a similar stanchion of wrought-iron, because the modulus of elasticity is nearly the same in both these materials. However great the ultimate resistance of the steel may be, the crushing stress will inevitably be reached at some period of the increasing bending strain if only the load is sufficient to overcome the resilient force of the bow and to set up the ever-increasing deflection. Whe this deflection begins to act, the stanchion may be considered as having failed for all practical purposes, no matter what may afterwards happen to it during the course of the buckling process. A steel stanchion would theoretically take a greater ultimate deflection than the wrought-iron stanchion before it became actually crushed or crippled on the concave side, but the breaking weight would be nearly the same for both materials. When struts of different sections are ranged together according to the radius of gyration, the results of experiments agree together as closely as could be expected; but if struts of equal diameter and of different patterns of cross section are ranged together their strengths vary. In short stanchions the superior strength of the steel will come into play, and in a stanchion of unequal elasticity it will come into play to some extent at all ratios of length to diameter.

Professor T. Claxton Fidler, in his treatise on "Bridge Construction," states that there can be no doubt that amongst the different sections of rolled iron bars or built struts the radius of gyration should be taken rather than the outside diameter as the true measure of stiffness.

Professor Henry Adams proposed a vote of thanks to the lecturer. Mr. Percival Marshall, representing the Institution of Junior Engineers, seconded the motion, supported by Messrs. J. D. Blount, R. J. Gifford Read, P. J. Waldram, H. Lovegrove, W. H. Shephard, H. A. Satchell and H. J. Young, jun.

ST. MARTIN'S-IN-THE-FIELDS.

THE Vestry of St. Martin's-in-the-Fields lately applied to the London County Council for a contribution towards the expense of altering the steps of the parish church, for which a contract had been arranged. The improvements committee of the County Council obtained the opinion of the Royal Institute of British Architects on the subject, which was expressed in the following letter from the secretary:—

"The Council of the Royal Institute are strongly of opinion that the suggested removal of the landing which now divides the flight of steps leading up to the portico would be very detrimental to the appearance of the west front of this fine church. Owing to the fall in the ground from north to south, the lower steps are of necessity broken off where they merge in the ground line. An unsymmetrical base of this kind to a symmetrical portico would have a distinctly bad architectural effect; but by the ingenious device of dividing the flight of steps in the middle, a perfectly symmetrical base of seven unbroken steps is provided for the colonnade, while the lower steps, which must terminate unsymmetrically, are separated from the design of the building and do not form part of it. My Council feel, therefore, that nothing short of actual necessity could justify the removal of the landing or platform, while from the personal observation of its members and reliable information received, they are fully assured that no such necessity exists. In the event of the widening of the public footpath ever becoming necessary, they have no doubt that the suggested setting back of the western steps is the least objectionable means of effecting the purpose. But even if, on account of such necessity, the landing be omitted from the steps in front of the portico, they strongly recommend that it should be retained on the south side, where it would be useful in helping to preserve somewhat of a symmetrical appearance to the base of the portico. While considering the question of the appearance of this portico, my Council beg leave to suggest whether it would not be possible to remove the cast-iron railings now fixed at the top of the steps and between the columns, as they constitute a serious disfigurement to the building."

On Tuesday last the subject came before the weekly meeting of the County Council. The improvements committee recommended the Council to make a contribution of 270*l.*, one-third of the cost of the reconstruction of the steps in front of the church in such a way as to increase the width of the footway on the eastern side of St. Martin's Place to about 9 feet, on condition that the Council of the City of Westminster should agree to retain the platform on the steps on the southern side of the church, this being considered the least objectionable method of providing for a widening of the thoroughfare at this point. The committee did not feel themselves able to advise the Council to arrange for the removal of the cast-iron railings from the top of the steps as suggested by the Royal Institute.

Colonel Probyn said the ecclesiastical authorities had consented to give up the steps to be dealt with for the public benefit. The local authority fully recognised the importance of the improvement.

Mr. Shaw-Lefevre pointed out that the architects reported that the alteration would seriously affect the architectural effect of the church, and that nothing short of actual necessity could justify the removal of the landing or platform. They also stated that, should the widening of the footway ever become necessary, they had no doubt that the suggested setting back of the western steps was the least objectionable means of effecting the purpose, but they strongly recommended that the landing on the south side should be retained. That was the scheme adopted by the committee, but in his opinion it was still objectionable, and would interfere with the architectural features of the church. He moved as an amendment that, in view of the report of the Royal Institute of British Architects, the Council was not prepared to take the responsibility of sanctioning the alteration by contributing any part of the cost.

Sir H. B. Poland, Q.C., seconded the amendment.

The Hon. W. Peel, M.P., said he would be no party to the mutilation of this beautiful church. It was wholly unnecessary for the Council to assist in damaging the church for the sake of merely adding 2 feet 6 inches to the footway. When they asked the opinion of a body like the Royal Institute they should be led by its report.

Mr. Burns, M.P., suggested that one of the wealthy parishioners, such as Mr. Astor, should give the vicar of St. Martin's 10,000*l.* with which to engage a competent architect under whose guidance they could underpin the whole church, including the portico, put it on a sliding gantry, remove it 40 feet back, and give it an alignment with Duncannon Street. In that way alone could the widening of St. Martin's Place be carried out without injuring the church.

Dr. Longstaff, the chairman of the improvements committee, said that if this street required widening the easiest way would be to take down a portion of the National Gallery.

The amendment was carried by a large majority.

The Next Visit of the Institution of Junior Engineers will take place on Saturday, December 8, at 3 P.M. It will be to the electric generating station of the London United Tramways Company, 88 High Road, Chiswick.

The Third Ordinary Meeting of the Liverpool Architectural Society will be held at the Law Library, 41 Castle Street, Liverpool, on Monday next, December 3, at 6 P.M., when a paper will be read by Mr. Alfred Darbyshire, Manchester, on "Some English Cathedrals." The lecture will be illustrated by lantern-slides, specially prepared and exhibited by Mr. Montague B. Copland, St. Anne's-on-Sea.

NOTES AND COMMENTS.

The arrangement is often made in building contracts that if the contractor becomes bankrupt there is an end to the contract, and all materials and plant shall be forfeited to the building owner. But it is sometimes held that the trustee of the contractor has a prior right to the materials. It is not always easy to distinguish between these two varieties of cases, but of late years, owing to the power of legislation in connection with bankruptcy, the building owner suffers more often than formerly. One example of the difficulty of dealing with the two interests came before Judge Meynell at the Bankruptcy Court, Sunderland. A local builder named Brown entered into a contract with the Athenæum Buildings Company for the erection of premises in Fawcett Street, Sunderland. The contract authorised the company to terminate it if the works were not duly proceeded with, and also empowered the company to take possession of and use all the plant, material, &c., upon the works should Brown become bankrupt, or should the company have to exercise their power to terminate the contract, &c. On Brown's disappearance a year ago notice was at once given of the termination of the contract, and by order of Mr. Eltringham, the architect, a quantity of dressed stone, which was prepared for use in the Athenæum Buildings, was removed from the builder's stoneyard. The company also took possession of their buildings and all the materials and plant, &c., found on the premises. The builder's bankruptcy followed. The trustee claimed from the company the sum of 218*l.* 7*s.* 6*d.*, the value of material, plant, &c., and 58*l.* 17*s.*, the value of dressed stone removed from the stoneyard. Judge Meynell held that the contention of the Athenæum Buildings Company as to the claim for 218*l.* 7*s.* 6*d.* was right, and therefore refused the trustee's application as to that sum, but he considered that the company had no power to seize the dressed stone on the Holmeside ground, and gave judgment for the trustee for 58*l.* 17*s.*; but as both sides had been only partially successful, he gave no costs, but said the trustee could have his costs out of the bankrupt's estate. It will be observed that the judge followed the old principle that materials and plant, to become the property of an employer, have to be found on his land, which is the site of the unfinished building. If it should happen that the quantity of materials is more than is needed for the building, then the surplus belongs to the builder's representatives. The decision in the Sunderland case is of great importance, and should be kept in mind when contract deeds are being drafted. It was merely a question of cartage which prevented the architect's action from gaining the approval of the Court; but as the stones were not removed in the builder's carts from the stoneyard, they had to be regarded as still belonging to the bankrupt.

Four new volumes have been added to the *Builder* Students' Series, viz. "Stresses and Strains," by Mr. F. R. Farrow; "Structural Iron and Steel," by Mr. W. N. Twelvetrees; "Land Surveying and Levelling," and "Field Work and Instruments," by Mr. A. T. Walmisley. The publishers are D. Fourdrinier and Whittaker & Co. It will be seen that the first and second treatises to some extent overlap, for the strength of beams means the manner they resist stresses and strains, and the two could easily be arranged as one. For that reason there ought to be uniformity in the expression of formulæ in both. Would a novice, for instance, be able to recognise that the well-known Gordon's formula was expressed by equations apparently so different as they are set down by the two writers? Uniformity in gauges and other things has been long demanded by manufacturers, but uniformity in expressing formulæ is no less needed. Mr. Farrow's explanations should be helpful to students in passing examinations, as well as afterwards in office work. American as well as English practice is noticed in Mr. Twelvetrees's book. Mr. Walmisley's two volumes are also related—in fact, one is the supplement of the other. The book on instruments is not confined to the examples which are manufactured by any one house. The instructions for using the instruments are sufficiently detailed to enable the beginner with a little perseverance to employ them in the office or in the field. "Land Surveying and Levelling" is adapted to the use of estate surveyors, surveyors for Parliamentary plans and for those engaged in contract work, levelling, contouring and setting out lines. Considering its size it is a very complete manual, and is altogether different in character to those which are compiled by schoolmasters and draughtsmen who have had no experience in the field.

ILLUSTRATIONS.

LICHFIELD CATHEDRAL:—REREDOS.

It was evidently the aim of the late Sir Gilbert Scott to suggest that the restoration which he directed was to increase the importance of the choir. There can be no doubt the present appearance of that part of the building is altogether unlike what was to be seen before Scott's operations were commenced. The former state of the choir was so negative, as it were, it might almost be said that any change must be an improvement. If, therefore, the reredos seen in the illustration is a little over-emphatic, one of the reasons may have been the desire to overcome the coldness which the old arrangement produced. Another excuse can be offered in the desire to exemplify the fitness of the marbles and other materials which the diocese was able to yield for such a work. In the centre the Ascension is represented, and below the Lamb is introduced, with the Evangelistic symbols. It was considered advisable to allow the glass in the lady chapel to be seen without impediment; but more effect would have been attained if the light became that "dim, religious" variety which the Mediævalists sought after under similar circumstances.

NEW LONDON AND COUNTY BANK AND SHOPS, EAST GREENWICH

These new premises for the London and County Bank, with two shops, have just been completed to the design of Mr. T. Norman Dinwiddy. The fronts are faced with stocks with Tunbridge Wells red brick and Portland stone dressings, roofed with Dinorwic slating. The total cost was 3,200*l.* Mr. W. Mills was the builder.

HARROW ROAD BRANCH, LONDON & COUNTY BANK. ENTRANCE

Our illustration shows the new entrance to this branch of the London and County Bank, recently formed, with other alterations on the addition of the adjoining shop premises. The doorway—the design of which has been somewhat restricted by the character of the old stuccoed front—is of Portland stone, the column shafts polished black marble and the joinery of teak. The cost of the entire extension exceeds 3,500*l.* The architects were Messrs. T. Dinwiddy, F.R.I.B.A., & T. N. Dinwiddy.

DESIGN FOR PROPOSED LABORATORY.

CASTLE HOUSE, HORSELL, SURREY.—DRAWING-ROOM.

The illustration shows the interior of the new drawing-room included in the additions to this sixteenth-century building, the residence of Captain Dorrell. The effect of the ceiling is heightened by colour decoration at the intersections of the ribs. The woodwork generally is of pitch-pine, the floor being of oak. The chimneypiece is of red Devonshire marble.

The architect was Mr. Frederick Meeson, of Mare Street, Hackney.

BELMONT LODGE, HARROW WEALD.—BILLIARD-ROOM.

This billiard-room, which has been added to the residence of Mr. Arthur Thomson, is entered through the conservatory, and is lighted by windows on three sides.

The architect was Mr. Frederick Meeson, of Mare Street, Hackney.

NORMAN ARCH, ST. BOTOLPH'S, COLCHESTER.

SCIENTIFIC SOCIETIES IN ENGLAND.*

OF late years it has been not unfrequently the custom for those who have occupied the position which I this day hold to address the Society on some practical subject, and all here present will gratefully remember the extremely valuable and suggestive addresses of Sir John Wolfe Barry on the means of intercommunication in London, a matter which we all agree with him in regarding as highly important and urgent.

On the present occasion I propose to say a few words on a subject of less practical importance, so far as the needs of everyday life are concerned, but still not without some general interest and not without a direct bearing on the history of the advancement of human knowledge—the "Origin, Development and Aims of our Scientific Societies." The subject is a large one, and it will be impossible to enter into details with regard to its almost innumerable ramifications. In justification of a considerable degree of limitation I may incidentally mention that the "Official Yearbook of the Scientific and Learned Societies of Great Britain and Ireland" for the year 1900 extends over upwards of 290 octavo pages.

The principle of collective action was at an early date recognised among the Greeks and Romans, and associations for the purposes of finance, trade, religion and politics, known as collegia, were of great importance in Roman civil life. In those days three persons sufficed to form a "college," whereas now seven are required to constitute a "limited liability company." I will not enter into the relations between the collegia and the universitas of classical times, but may call attention to the fact that the modern university with its colleges derives its name from the ancient institution, though its scope has been most materially modified.

The Academia at Athens and the museum, founded in B.C. 280 by Ptolemy Philadelphus at Alexandria, with botanical and zoological gardens as well as a lecture-room attached, were much of the nature of modern scientific societies, though more of an exclusively educational character.

The principle of collective action was maintained by the guilds of Saxon times and the livery companies of London and other great cities, some of which date back to the twelfth and thirteenth centuries. These associations for the purposes of trade and commerce, the members of which met at stated intervals for the discussion of matters of common interest, offered an example which those engaged in the advancement of different branches of knowledge could readily follow, and academies are said to have been founded in some continental cities in the thirteenth, fourteenth and fifteenth centuries, while many more can authentically be dated back to the sixteenth and the beginning of the seventeenth century.

In England no learned society received a royal charter before 1662, when the Royal Society was incorporated by Charles II. It had, however, been instituted in 1660. So early, moreover, as 1645 the lovers of experimental philosophy formed a society which met weekly in London on a certain day to treat and discourse of philosophical affairs, and many of its members became subsequently the first Fellows of the Royal Society. About the year 1648-49, this little band of students was divided into two—one part remaining in London and the other migrating to Oxford, where a Philosophical Society of Oxford was established, that subsequently for some time worked in concert with the Royal Society, and did not finally cease to exist until 1690.

We shall have to return in the course of my remarks to the early days of the Royal Society, but it will be well to dwell now for a short time on the origin of the Society of Antiquaries, which in its unchartered form can claim a considerably higher degree of antiquity. About the year 1572, "divers gentlemen of London, studious in antiquities, formed themselves into a College or Society of Antiquaries." The honour of this foundation is "entirely due to that munificent patron of letters and learned man, Archbishop Parker. The members met near twenty years at the house of Sir Robert Cotton, and in 1589 resolved to apply to the Queen for a charter of incorporation and for some public building where they might assemble and have a library." A petition was prepared for presentation to Her Majesty Queen Elizabeth praying for the incorporation of "An Academy for the Studye of Antiquity and History," the meetings of which were to be held in the Savoy or the dissolved priory of St. John of Jerusalem, or elsewhere. It is uncertain whether this petition was ever presented, but the Queen seems to have given the Society her countenance, and under the presidency of Archbishops Parker and Whitgift successively it flourished, and a list of thirty-eight of its members, comprising such well-known names as Camden, Cotton, Erdeswicke, Lambarde and Stow is still extant. For some cause or other Elizabeth's successor, James I., thought fit to dissolve the Society in 1604, and though attempts were made to revive it in 1617, and though there was an antiquaries' feast on July 2, 1659, the Society remained in a dormant condition until 1707. It then held weekly meetings at the Bear Tavern in the Strand, and afterwards at the Young Devil Tavern in Fleet Street, subsequently moving to the Fountain Tavern. In 1718 the Society was reconstituted, and in 1751 a charter of incorporation was granted to it by George II., who declared himself the founder and patron of the Society of Antiquaries of London.

In the meantime, the Societies for Promoting Christian Knowledge and for the Propagation of the Gospel had been founded, the one in 1698 and the other in 1701. These societies, however, being of a religious and not a scientific character, lie outside my province.

Having traced the inception of the two oldest of our learned societies, which in their early stages partook more of the nature of clubs than of what are now known as societies, I propose, before considering their further developments, to say something as to the proper aims and objects of a learned society, and the means usually adopted for carrying them into effect. Such a society is an association of persons united together by common tastes and anxious to improve or extend some particular branch of knowledge, or even the whole range of scientific inquiry. With this object in view, it becomes necessary to hold periodical meetings for the discussion of subjects in which the society is interested, and for taking such action in respect of them as may seem desirable. The holding of such meetings involves an organisation and the appointment of presidents to take the chair at meetings, of secretaries to summon them, and of a treasurer to receive those subscriptions without which an association of the kind cannot exist. Moreover, for the determination of questions of policy and finance, especially when the society issues publications, a council of some kind becomes a necessity. It is on this organisation that the success or failure of a society mainly depends, and the questions as to the length of period that presidents and others should remain in office, what proportion of new blood should be infused into the council each year, and how far those in power are carrying out the views of the bulk of the members of the society, have frequently been discussed with more or less warmth. In some instances the too conservative apathy of the council has led to disruption and the foundation of new societies, or to the society under their charge being reduced to a state of inanimate slumber, while, on the other hand, too rapid revolutionary measures have led to diminutions in numbers, if not to absolute rebellion. Much, of course, of the welfare of a society depends upon the character of its publications being kept at a high level, and on their being brought out with scrupulous regularity.

There is one condition in the life of a scientific society which is entirely beyond its control or that of its council, and this condition may be superinduced by the activity of the society itself. As researches proceed and knowledge extends, new branches of inquiry are opened, which can only be investigated by those who apply themselves specially to the subject. New publications are required, particular days have to be set apart for the discussion of the subject, and eventually it is found desirable either to establish a separate branch of the old society, or to constitute a new one. The latter course is the one that has been most often adopted, especially in the case of biological science; and not infrequently the new society finds a home in the apartments of the parent society, and under its fostering care.

This is, of course, a reason, and a legitimate reason, for the multiplication of societies having closely cognate but not identical objects in view; but the fact that in all the centres of population and intelligence throughout the United Kingdom there are devotees of science no less able and energetic than those who reside in and around the Metropolis, will account for the reduplication of societies on precisely the same lines as the parent societies in London throughout the whole kingdom. Were new societies not to come into existence, and were the older societies to attempt to adjust themselves to all the requirements of modern science, they would soon collapse under the burden thrown upon them.

Let us now go back to the period immediately succeeding the Restoration, or to the year 1663, in which Charles II. granted his second charter to the Royal Society of London for improving natural knowledge. At that time, as has already been observed, the Society of Antiquaries was in abeyance, so that the Royal Society was practically the only institution of the kind in Britain, and its aims were naturally wide. On November 20, 1663, the Society* "consisted of 131 Fellows, of whom 18 were noblemen, 22 baronets and knights, 47 esquires, 32 doctors, 2 bachelors of divinity, 2 masters of arts, and 8 strangers or foreign members." With the exception of the large proportion of physicians or doctors, it will be observed that the Society in the main was composed of noblemen and gentlemen of independent position, and that the professional element was to a very great extent wanting. Great attention was paid to experimental methods, but "what the learned and inquisitive are doing, or have done in physick, mathematicks, mechanicks, opticks, astronomy, medicine, chymistry, anatomy, both abroad and at home" were subjects on which they were solicitous. Many of the branches of science diligently pursued at the present day were either unknown or in their infancy. The variation of the compass had been observed, but magnetism and electricity presented almost untrodden fields; the steam-engine was in an embryonic stage; visions of space with four or more dimensions had not visited the poetical mathematical brain; microscopes and telescopes were in their infancy; the family of the planets was no more numerous than of old; the circulation of the blood had not met with universal acceptance, and the existence of bacilli was but dimly conceived; chemistry was of the crudest, and the elements were earth, air, fire and water; anatomy had already made notable advances, but dermatological, laryngological and odontological societies were not even dreamt of; geology was unborn, and palæontology did not exist, except in connection with Noah's deluge.

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* Opening address delivered before the Society of Arts by Sir John Evans, chairman of Council.

* Weld's *Hist. of the Royal Society*, i. p. 145.

One of the results of this very wide scope of the Royal Society was that at its meetings the variety of subjects brought forward for discussion was great; and the early volumes of the "Philosophical Transactions" contain a large amount of miscellaneous reading. I am not sure that, as a means of whiling away a spare half-hour, one of the first twenty volumes of the "Transactions" would not by most persons be found more attractive and amusing than the volume, say, of Series A for the year 1900.

To turn to the other societies which were in existence early in the eighteenth century. At the beginning of that period life again returned to the Society of Antiquaries, which resumed its regular meetings in 1707, and by 1717 was in active existence, though its numbers were limited to one hundred. As before stated it received its charter of incorporation in 1751 and in 1780, through the liberality of George III., it had apartments granted to it in Somerset House.

The Society for the Encouragement of Arts, Manufactures and Commerce was founded in 1754, but not incorporated until 1847, and this Society, together with the two already mentioned, form the trio from which nearly all the numerous learned societies of the present day have sprung by what may be regarded as a natural process of evolution.

Let us now consider the order of development in which some of the principal scientific and learned societies of the present day have been derived either directly or indirectly from the three parent societies which we have had under consideration. The dates assigned are those of the foundation of the societies, and not of their charters. Indeed, some scientific societies still remain unchartered.

As might have been expected, Scotland was not long in following the example set by England, and the Medical Society of Edinburgh was instituted in 1734, to be followed by the somewhat kindred Harveian Society in 1752. In the meantime, the Royal Society of Edinburgh, or as it was originally called, the Philosophical Society, was established in 1739. The Royal Physical Society of Edinburgh, exclusively devoted to natural history and the physical sciences, was founded in 1771, and by 1813 had absorbed no less than six other societies, which became incorporated in it.

In Ireland the Royal Irish Academy for "the study of science, polite literature and antiquities," was founded in 1785, and may be regarded as combining the attributes of the three parent societies in London.

Among the offshoots of the Royal Society of London, the first perhaps is the Medical Society, founded in 1773, which, however, has never comprised a large number of Fellows. The Linnean Society, for the cultivation of natural history in all its branches, was founded in 1788, and has from 700 to 800 Fellows. These are the only two London societies coming under this category that date from the last century.

During the century now drawing to its close the vast advances in science, and the innumerable aspects that it assumes, has led to the foundation of numerous scientific societies, each with a more or less limited scope. In natural history we have the Horticultural (1804), the Zoological (1826), the Entomological (1833), the Ornithological (1837), the Royal Botanic (1839), the Ray Society (1844), the Palæontographical (1847), and others that it would be tedious to mention.

Geology as a new science had a society founded for its study in 1807, the Geologists' Association followed in 1858, and at a later date the Mineralogical Society (1876). The Royal Astronomical Society (1820) has been supplemented by the British Astronomical Association. Mathematics and physics have also their own societies, as have also statistics, a subject which has a mathematical side as well as one in the direction of commerce and the affairs of ordinary life. Engineering is represented not only by the Institution of Civil Engineers (1818), but by the Institution of Mechanical Engineers (1847), of Mining Engineers (1851), the Iron and Steel Institute (1869), and that of Electrical Engineers (1871). Geography has had its own Royal Society since 1830, microscopy its society since 1839, and meteorology since 1850. For medicine, pharmaceutics, pathology, neurology, anatomy and some other branches of medical inquiry special societies have been founded in London. The Victoria Institute, or Philosophical Society of Great Britain, was founded in 1865, its primary object being the attempt to reconcile apparent discrepancies between Christianity and science.

In Edinburgh and Dublin scientific societies have multiplied, though not to a similar extent, and throughout the United Kingdom there are numerous literary and philosophical societies, that of Manchester dating back to 1781. There are also several provincial geological societies, and almost every county has its natural history society or club.

Moreover, the British Association for the Advancement of Science, founded in 1831, continues to hold its annual meetings at different centres in the Empire, and helps to maintain the general interest in the advancement of knowledge and to kindle or keep alive local zeal.

The offshoots from the Society of Antiquaries have not been so numerous or important as those from the Royal Society, the field of archæology being much more restricted than the wide domain of more purely "natural knowledge." The Society of Antiquaries of Scotland dates, however, from 1780, and that of Newcastle-on-Tyne from 1813, while the Literary and Antiquarian Society of Perth goes back to 1784. Several branches of antiquarian study have now their own societies. The Numismatic Society was founded in 1836, the Royal Historical Society in 1868, the Society of Biblical Archæology in 1871, the Palæographical in 1873, and that for Hellenic studies in 1879. There are also special societies for the exploration of Palestine and Egypt, as well as the important Royal Asiatic Society with its different branches. The peripatetic habits of the Royal Archæological Institute and of the British Archæological Association (both 1843) help to maintain the warmth of local interests and to disseminate a certain amount of archæological information.

Anthropology and ethnology have made great advance since the foundation of the Ethnological Society in 1843, and of the Anthropological in 1863. The two merged in 1871 to form the Anthropological Institute, which has rendered signal services to science. A minor branch of anthropology—folk-lore—has had its own society at work since 1878.

The Society of Arts—to make use of its shortened title—can claim nearly as numerous an offspring as its elder sisters, the Royal Society and the Society of Antiquaries. Her descendants, moreover, are fairly entitled to as high, if not indeed a higher rank and importance. It is not merely the Royal Scottish Society of Arts (1821) that she can claim as an offshoot, but it was the Society of Arts that first in England devoted attention to the all-important objects of forestry and agriculture. The Royal Agricultural Society originated not earlier than 1838, though in Scotland a Society of Improvers of Agriculture was instituted in 1723, a Dublin Agricultural Society in 1731, the Bath and West of England Society in 1777, and the Highland Society in 1784.

It would, moreover, be unfair not to credit the Society of Arts as well as the Royal Society with having laid the foundations on which the Institution of Civil Engineers and the cognate bodies have been erected. The Chemical Society was established at a meeting held at the rooms of the Society of Arts in 1841. From this arose the Institute of Chemistry in 1877. The Society of Chemical Industry (1881) to a large extent grew out of the Chemical Section of the Society of Arts, which dealt for some years with the chemical industries, and was dropped on the foundation of the Society. The Sanitary Institute and the other sanitary societies certainly owe their origin to the conferences on the health and sewage of towns held by the Society of Arts in 1877, 1879 and 1880. The City and Guilds' Institute also originated in consequence of the action of the Society in the matter of technical education. They took up and carried on the technological examinations founded by the Society of Arts.

The Science and Art Department may be said to have grown out of the 1851 Exhibition, which was organised by the Society of Arts. Its examinations were based on the model of the Society of Arts examinations, and, indeed, it was to a very large extent a development of the Society's work by those who were already connected with the Society of Arts.

It must never be forgotten that in its earlier days inventions of all useful kinds, and all that was new in machinery and manufactures, came within the scope of the Society, which in thirty years spent nearly as many thousands of pounds in rewards and premiums for useful inventions.

It took a very active part in all educational movements and a warm interest in the welfare of our colonies, and to its credit be it said that the examinations of the Society of Arts still rank among the most useful and thorough, while the existence of our Indian Section still evinces our interest in the prosperity of the dependencies of the Empire.

What the Society has done for the advancement of art it is difficult for us of the present day fully to appreciate; but it must be remembered that one of the first, if not, indeed, the first, public exhibition of pictures was that held in this Society's rooms in 1760, and that from this exhibition sprang the Royal Academy, the first exhibition of which, comprising 136 works only, was opened in 1769. We may, therefore, here claim the Royal Academy as in a certain sense an offshoot from our body. The Royal Institute of British Architects, founded in 1835, may also in some degree be regarded as connected with the Royal Academy, which admits architects among its members. The Photographic Society also grew out of an exhibition of photographs, the first of the kind, held in our rooms. The foundation of the Royal College of Music is likewise due to the exertions of the Society of Arts.

I have dwelt at considerable, perhaps too great, length on the various societies in the United Kingdom that are more or less intimately connected, so far as their origin is concerned, with what I have termed our three parent societies. It is needless to add that analogous societies to those in the Mother Country have sprung up in many of our numerous colonies and dependencies, and even in America before the declaration of independence. The American Philosophical Society, with its headquarters in Philadelphia, was founded by Franklin in 1743.

I venture to hope that from the historical point of view the sketch that I have attempted to draw of the development of scientific societies in these islands has not been entirely devoid of interest. It testifies also to the success that has attended the united action which the societies were founded to foster.

It would, indeed, be difficult to say how far the work done by any society would have been accomplished by the individuals composing that society, without combination or collective organisation. A society of course is only a collection of individuals, and the work of the society is the work of the individuals composing it.

A society offers opportunities for discussion, brings men of similar ideas together and substitutes collective and organised action for isolated individual effort. It affords means of publication, organises research, records discoveries, stimulates invention, and assists students by providing a common meeting-place and centre of action. Every scientific discoverer desires immediate publication of his work, both for his own reputation and to secure the assistance of his colleagues. Every industrial inventor requires publication in order that he may secure the natural profits of his invention. A society systematises and arranges the science or study which is its subject matter.

The present condition of science is certainly due to the organised efforts of such societies as the Royal Society and its subordinate societies in this and other countries. They secure public recognition for science and those who pursue it; they prevent over-lapping, serve to deter different men from working on the same lines, and they bring influence to bear on the public and on the Government. Any individual is less powerful by himself than when he is associated with others seeking the same object. An active society is a corporation with a perpetual succession, and it never dies. The work carried on by an isolated student ceases at his death, but the work done by a number of students associated together goes on and on. As one man drops out another takes his place.

An excellent example of the reciprocal influence of scientific workers and of a scientific institution upon each other is afforded by the Royal Institution. Without Davy, Faraday or Tyndall, the Royal Institution would never have become the important body it now is. But without the Royal Institution neither Davy nor Faraday would have had any opportunity for carrying out their scientific work, and of obtaining their scientific reputation, and perhaps the same may be said to a certain extent of Dr. Tyndall.

The history that I have been tracing comprises within it a record of the advance in many directions of our acquaintance with the secrets of nature, of our turning that acquaintance to practical account, and of the consequent progress of the nation in material prosperity. It bears witness likewise to that specialisation in science which, though by no means an unmixed blessing, seems to be, of necessity associated with all advancement in natural knowledge. The days are long since past when any single individual could attempt to cope with the whole encyclopædia of science, but the question not unfrequently arises at the present day whether the position of the specialist would not be more secure were the foundations on which he builds extended over a larger area, and were his scientific sympathies somewhat wider in their character.

Another question that may be asked is whether there is any need for this multiplicity of societies. The answer from anyone who in whatever manner believes in evolution will be, that at the time of founding each society a necessity for it must at all events have been thought to exist, and that the analogous societies at that time in being must have been either unable or unwilling to adjust or expand themselves, so as to include the subject for the study of which the new society was instituted. Many of the subjects, for instance, that originally came within the domain of the Royal Society, and indeed are still included within it, have by degrees been not absolutely banished from it, but relegated in the main to other societies, founded more especially for the study and illustration of such subjects. The Linnean, the Astronomical, the Chemical and the Geological Societies afford instances in point, and any attempt to suppress such societies and to bring their members all within the fold of the Royal Society would have a disastrous effect on the advance of science, and would absolutely overweight the powers of the Royal Society itself. At the same time it must be remembered that accounts of important discoveries in any of these branches of knowledge are cordially welcomed by the Royal Society, and that it is usually the case that the leading Fellows of these special societies are also Fellows of the Royal Society. The same in a lesser degree holds good with the Society of Antiquaries, as archæological discoveries, especially when bearing on the early history of man, are welcomed alike on both sides of the quadrangle at Burlington House.

In the case of local societies which in their character are almost identical with those of the Metropolis, the geographical reasons for their existence are in most cases undeniable. Their isolation is, however, to some extent a drawback, and a great step in advance has been made by the Society of Antiquaries, which has now brought into union with itself nearly the whole of the archæological societies throughout the kingdom—or, at all events, forty-five of their number—which now hold an annual congress in the apartments of the Society in Burlington House. The results have been most satisfactory. Each society while retaining its own individuality has co-operated with the others in matters of common interest, and among other fruits of collective action an annual classified and subject index of the archæological papers of each year is now published.

Of course, a certain number of societies are born to die; but it is remarkable how few of them have expired without having done some good work. In some instances two rival societies, neither of them in a flourishing condition, have coalesced, and the combined body has acquired a degree of vitality and energy that neither of its constituents ever possessed. In the archæological world it is possible that there are still two bodies in existence the amalgamation of which would probably result in good.

An arrangement by which the subdivision of a society has been obviated, and which on the whole has worked in a satisfactory manner, has been adopted by the Society of Chemical Industry, which has branches in centres of importance on both sides of the Atlantic. These branches hold their own meetings, and discussions and reports of them are published in the Society's Journal, together with those of the meetings in London. This union of the Metropolis with capitals in the provinces is further strengthened by the holding of the annual meetings of the Society sometimes in Liverpool or in some other important centre of chemical industry.

It will have been observed that I have hitherto been speaking of societies more or less intimately connected in their origin with what I have termed the three parent societies, but there is another category of studies which these societies either do not represent at all or do so in a very imperfect manner. They have been termed the philosophico-historical sciences as distinct from mathematical, physical and biological sciences. A certain portion of them, such as language and history, come within the province of societies cognate with the Society of Antiquaries, while this latter deals directly with antiquities. There remain philosophy, psychology in its non-biological aspects, economics, and probably some other branches of study or speculation. Literature is another somewhat outlying field, but there are numerous literary associations, some of them practically printing clubs, others of a more social character, and others again which hold regular stated meetings for the study and discussion of the works of some well-known author—Dante, for instance.

The title "Literary and Philosophical" has been adopted as a convenient one by many local societies, probably on account of its great comprehensiveness. Many are doing good work, but the term "philosophical" is generally used in the same sense as in the case of the "Philosophical Transactions" of the Royal Society, and the term "literary" is accepted as covering all that cannot be regarded as philosophical.

Turning to the more purely philosophical societies that have been established in London, it would seem as if for some reason or other the soil was not congenial for their growth or longevity. The Dialectical Society, founded in 1865, was dissolved in 1888; the Psychological, founded in 1875, ceased to exist in 1879, but was resuscitated under the name of the Society for Psychical Research in 1882. The Zetetical Society, established in 1878, and the Aristotelian in 1880, do not appear in Whitaker's List of Societies and Institutions, though the latter, notwithstanding that its members are few, is still in active operation. Altogether the number of those interested in abstract philosophy seems to bear no proportion to that of the votaries of the study of nature in all its phases and of those who devote themselves to the application of science to the good of mankind.

In the Institut de France one of the Académies is that of Sciences Morales et Politiques, which, however, is divided into five sections. Of the eight places devoted to philosophy, only six were filled at the beginning of the present year, but this may have been purely accidental. The mention of the Institut suggests the question how far a similar association of academies would meet the requirements of this country. Such a question is beyond the limits of the present address, but in passing I may say that the necessary limitations of the Institut, the payment for attendance, the method of election of its members and its close connection with the Government of the day, all present features which are hardly in accordance with our insular traditions. In Paris itself the Institut has had to be supplemented by various important scientific societies, such, for instance, as the Geological Society and the Society of Antiquaries of France.

But to return to England. It has been suggested to me that it would be of some interest were I to give a short account of the vicissitudes through which some of our principal societies, including the three parent societies, have passed. No doubt with all of them there have been periods during which they may be said to have vegetated rather than lived, but to trace out the causes of their temporary suspension of life, and the reasons which led to the resumption of activity would involve an historical discussion of considerable length, and might also lead to invidious personal comparisons. Paradoxical as it may appear, these seasons of rest, or if it be preferred so to call it torpor, have not in the long run impaired either the utility or the prestige of the societies. A great deal of regular and useful work may be done without the machinery by which it is effected making sufficient noise to attract the attention of those not immediately interested in the work, and the torpor may, in fact, have been apparent rather than real. Under any circumstances there can, I think, be but little doubt that it is better for a society to carry on its work in a thorough but unobtrusive manner than to be subject to paroxysms of fitful energy, and to be always devising new ways, instead of gradually improving the old.

Even a real torpor is not always deadly. There is a tradition in the Society of Antiquaries that once, in days gone by, the secretary was overheard to utter the pious aspiration, "Would to God there was nothing in this world older than a new-laid egg!" And yet the Society survives and is still carrying on useful and valuable work. May it long continue to do so, and may the Society of Arts and the Royal Society together with it long survive as the parents of many societies which have rendered and still will render indispensable assistance in the wide diffusion of knowledge.

ENGLISH CHURCH ARCHITECTURE.

THE subjects of the Rev. Walter Marshall's fifth lecture at the Town Hall, Horsham, were screens and roofs, of which the *West Sussex and County Times* gives the following version:—

In our churches there were to be found screens, of course, of various kinds. There were screens which separated the chancel from its aisles, as in the splendid example at Newark, and in rare instances there were screens at the west end of the singers' gallery. Also we had screens to chapels, in South Acre Church, Norfolk, for example. This is a very interesting church, which has not been spoilt at all by injudicious restoration. Then, again, we get screens round monuments. But when we speak of screens generally our thoughts always turned to the rood-screens, which add to the sense of completeness of the internal effect of a building. But in considering rood-screens we must be very careful to make a clear distinction between rood-screens in a cathedral or collegiate church and in a parish church. In the former the screen, almost invariably of stone, is of much more solid construction than in a parish church. In the parish church it divided the nave from the choir, but in the cathedral this division was of necessity far more marked than in the parish church, because the choir was reserved for the use of the clergy, provision for the laity being made in the nave. Therefore we may consider the choir of a collegiate or cathedral church before the Reformation as a church within a church. We have a considerable number of these fine rood-screens left in our cathedrals. It was necessary to have these solid enclosing screens to a collegiate choir in order that the clergy might not be disturbed during their offices, and also to receive some protection from the draughts which are inevitable in a large building. But their use also was symbolical as well as practical. They marked the separation between the faithful and the sacrifice, the nave and chancel emblematic of the church militant and church triumphant. The lofts themselves were used for various purposes. The priest read from this loft the Epistle and Gospel, and for this reason the rood-loft in a collegiate church was capacious and easily accessible. This was necessary because elaborate processions were formed at the end of the Epistle and Gospel. There was a marked division between the nave and choir, as if a solid wall had been erected from floor to roof. For instance, the people in the nave of the church at Tattershall had no more to do with the service going on in the choir than the congregation in Westminster had to do with the service going on at the same time in St. Paul's Cathedral. Therefore we must never think of the Epistle and Gospel in a collegiate church being read to the people in the nave from the rood-loft—they had their own service or altar in the nave. Of course altars were not uncommon in rood-lofts even in parochial churches. An inventory exists of date 1543 of the belongings of the altar in York Minster in the rood-loft. Sermons were also preached from this position before pulpits were introduced; announcements were made from it, and it was also occupied by minstrels. Constant reference is made to a pair of organs in inventories—in other words, one complete organ. Of course these organs were quite small, and wholly different to the instruments which assume such enormous proportions in these days, proportions which are altogether out of proportion to the functions these instruments were called upon to fulfil in the services of the Church. For centuries the organ has been kept in the rood-loft. Henry VI. expressly ordered that the collegiate rood-loft should also serve as organ gallery. As to parish churches, almost all churches before the Reformation were provided with chancel-screens and a rood-loft placed upon it. However, the screen seems first to have been used without a loft, because the earliest examples of them do not seem to have carried any loft, as, for instance, this beautiful screen from Stanton Harcourt, in Oxfordshire, late thirteenth or early fourteenth century; it is the same date as the arch which it spans; probably it is the earliest, or one of the earliest examples certainly, of chancel-screens existing in England. There is another early chancel-screen in that beautiful and interesting old church at Old Shoreham. It is rather later in date, perhaps, but one which, after careful examination, I do not think could have carried a rood-loft, at any rate. The earliest approach to a rood-screen in our parish churches seems to be in such a church as Barfreston, where communication between the chancel and nave is by a small wall, itself forming a sort of screen. In parochial churches the screens and lofts were nearly always of timber. Stone screens are the exception. A very good example is in Broughton, in the north of Oxfordshire, of the fourteenth century. It is seldom that more than one staircase is found in the loft, and it occurs apparently indiscriminately on the north or south side, whichever was the more convenient in the particular church. Sometimes a staircase developed into a turret, thus becoming a beautiful feature, but in many cases they were cramped and narrow and only a boy could pass through. Perhaps it was required for the acolyte to pass up to light the candles, which were so marked a feature in connection with the Mediæval rood-loft. The tops of most of the rood-screens to-day present a most unfinished appearance. In 1576 inquiry was made that rood-lofts "be taken down and altered so that the upper part thereof be quite taken down unto the cross-beams and that the said beam have some convenient crest put upon the same." They were determined to leave no trace of the rood and rood-loft, as notice this entry:—"To the cardenters and others taking down the rood-loft and stopping holes in the wall where the joists stood." There are so many churches show no signs at all where the rood-loft was fixed because they carefully plastered up the wall where the woodwork had been fixed into it. At Raunds in Northampton the rood was placed against the wall above the chancel arch, and in this way the wall was treated as a background. In the reign of Edward VI. the royal arms were placed on a beam over the screen or on the wall above the chancel arch. Arms came in with James I. and were used from 1603 to 1689. At Ranworth in Norfolk are the finest screens, as far as paintings are concerned at any rate, that we have left in the country.

Having shown views of different screens the lecturer went on to speak of wooden roofs, explaining first the technical terms in connection with the work. Of the beauties which Mediæval architecture presents to the student few, he said, were more striking than the open timber roofs, yet they were seldom noticed as they should be. The ravages of time seem to have left little impression upon oak. Most of the damage was through neglect and the ruthless vandalism of later times, though roofs, through their inaccessibility and form of structure, had come off lightly. Roofs might best be divided into five classes, viz. tie-beam, truss-rafter or single-frame, hammer-beam, collar-braced and aisle roofs. Tie-beam roofs occur at all periods. The tie-beam forms an arch with the curved braces which are framed into it and spring from small shafts. A portion of an old one at Old Shoreham was shown, also examples at Higham Ferrers. A perfectly horizontal tie-beam is seldom to be met with, it is almost always cambered. A variety often to be seen in Sussex, Kent and Hampshire consists of the tie-beam with or without a wall piece, and from its centre arises a king-post. The truss-rafter or cradle form of roof was probably chosen for purposes of gaining height and room—its superiority over the tie-beam both constructionally and on the score of beauty necessarily led to its being approved and generally used. The most likely theory of the origin of hammer-beam rafters was derivation from the mode of securing the feet of truss-rafters. Many buildings have double ranges of hammer-beams, whose object was to further stiffen the principals and bring all the pressure on the lower range and thence directly on the wall. A magnificent example from March in Cambridgeshire was shown. As far as this roof is concerned, England stands unrivalled amongst all other countries, there being few churches in Europe which can boast of such specimens of hammer roofs as are to be met with in almost every county in England. The collar-brace roof was a simplification of the hammer-beam. Sometimes we find the strut and collar are omitted. As to aisle roofs they are generally of a lean-to order. The earliest examples are simply a continuation of rafters to the nave, but the introduction of clerestories necessitated a distinct roof down to a flat pitch in order to leave as much space as possible in the aisle wall for the windows on that part of the building. Several slides of fine examples of aisle roofs, with bold and vigorous carving, were shown. Colour played a very important part in the decorative splendour of Mediæval roofs, and, giving harmony to the carving and heraldic devices, it could not be over-estimated.

At the evening lecture the Rev. W. Marshall had for his subject the Decorated period. He said the term "Decorated" was somewhat misleading, because some of the plainest buildings were found to be of this period, from 1250 to 1360. Having explained geometrical tracery and curvilinear tracery of windows, the first from about 1250 to 1315 and the second from 1315 to 1360, the lecturer said the introduction of the Pointed arch in the thirteenth century, both for constructive and ornamental purposes, effected a revolution in architecture. Designing of great buildings was set about in a perfectly novel manner. Instead of erecting huge masses of masonry to carry nothing more than a wooden ceiling, the construction influenced the designer in his whole plan. The Normans of course did not understand any such principles of construction, and consequently their towers fell in all directions over England. Architects tried to develop an earlier style. They evidently felt most perfect confidence that their own style was the only perfect one. Norman choirs and towers were cleared away without reserve, and anti-restoration societies existing in those days would have had their hands pretty full in protesting against the destruction of old work. With all the changes that took place there was a certain sense of unity preserved, and over and over again we find that proportion of later styles influenced by those of earlier work where two had to be grouped into one whole. Instances were given and illustrated. In England there was always a very sober spirit in design, and buildings erected in this period show an ample and satisfying reserve of strength, although indeed we could sometimes wish architects had not felt themselves so full of the promise of their predecessors. At this time spaces for shrines were enlarged. Within the chapels and also in various parts of the church monuments were found, which now began to assume great magnificence. The remarkable series of Eleanor crosses, erected between the years 1291 and 1294, were next referred to at some length. Only three now exist—at Northampton, Geddington and Waltham, the last being almost entirely new. The crosses were erected by Edward I. in memory of his queen, Eleanor, and any land might well be proud of these fine works of art. Singularly enough, the three surviving crosses illustrate three distinct styles of construction—Northampton an octagon, Geddington a triangle, and Waltham a hexagon. All had everal statues of the queen, and were adorned with the arms f England, Castile and Poictiers. The advance made in he constructive framework of the fan tracery vault, remarkably ich in effect, was originally the outcome of contention with tructural problems. After giving a few examples of the racery of this period, the lecturer went on to speak of the great ffect gained by the fine proportions exhibited in the arches. t Hanwell, Oxfordshire, there was a remarkable termination o a hood moulding—a little man playing a fiddle or instrument of that form. The work in canopies was noticed, and in peaking of the geometrical period the Rev. W. Marshall eferred at some length to the peculiarities of various clereories. Slides were shown illustrating his remarks, many being eautiful examples of the work of the Decorated period. He upposed more beautiful fourteenth-century work was found in e county of Lincolnshire than in any other county in England, nd it was this fact that accounted for the number of examples om Lincolnshire. The application of the crockets to pinnacles, rrets, gables and spires, imparted quite a new character and ntour to architecture. The ball-flower was a characteristic nament of this period, as the dog-tooth appeared of the evious period.

SCHOOL BUILDINGS IN THE METROPOLIS.

IN his report to the Board of Education, Mr. T. King, senior inspector, offers the following opinion on London schools:—

The buildings of the London schools are of two distinct types; the older schools built in accordance with the rules in force thirty years ago are long and comparatively narrow, and designed for desks placed longitudinally in three ranks only. Where effective lighting, warming and ventilation can be provided, and some kind of subdivision into classrooms is possible, such a design is not unsuitable for a school of moderate size, taught by a head teacher with assistants or pupil teachers who require the immediate supervision of the principal teacher. But such an arrangement proved inadequate to the changed condition of things which began in 1871, when children began to fill the schools in unprecedented numbers, and classes grew to be as large as the schools of past years. Accordingly the three ranks of desks expanded into four or even five, and no regulations would restrain such contrivances to meet the necessities of the altered circumstances. Most of the voluntary schools and some of the earlier Board schools are examples of this pattern; the space in these buildings is generally cramped; the lighting, though it has been continually improved, is never so effective as if the building had been designed properly in the first instance; warming and ventilation continue to be imperfect, and such adjuncts as cloak-rooms and lobbies that were never contemplated when these schools were built, have been provided indeed, but not more successfully than such excrescences can be where space has not been allotted for them in the original plan. The lighting is the least satisfactory detail; here the eminent architect has done his worst. The windows are too small, blocked with imitations of Gothic tracery, their dimensions and position determined apparently by a desire to produce a fine elevation rather than consideration of the needs of the persons who use the rooms. These are patent defects that the continued efforts of school managers cannot remedy entirely. Experience has led to the introduction of a completely different type of school. The modern Board school consists of a series of classrooms grouped on three sides of a central hall sufficiently large to hold the greater part of the scholars who fill the classrooms. The dimensions of the classrooms are determined by the number of scholars to be instructed in them, and the seats are arranged so that all may be easily seen by the teacher, and that his voice can reach them all without strain. Large windows admit light copiously from the left side, if possible, or at all events from the side. The desks are convenient; there is sufficient space for the scholars to circulate easily and for the teacher to arrange his apparatus. By day these rooms are bright and cheerful, and serve their purpose admirably, but, unfortunately, during a considerable portion of the year daylight fails. The problem of providing artificial light presents great difficulties, and the solution found by the Board cannot be considered at all successful. A few flaring gas-jets placed high above the heads of the scholars throw flickering shadows instead of light upon the desks, and contaminate the atmosphere of the room which they do not enlighten. A London Board school on a dark winter's day—and there are many dark days—is a dismal place. There is not light but darkness visible, and in the gloom dim forms of children may be descried poring hopelessly over their tasks in the heavy mephitic atmosphere. Habit possibly finds nothing strange in such circumstances, but an unprejudiced observer wonders why some better attempt is not made to supply the prime needs of healthy life—air and light. Considerable anxiety has been expressed at the frequent failure or weakness of the eyesight of London children, and apparently not without good reason. May not one cause of the mischief be found in the strain on the sight caused by working in bad light? What is wanted is a strong central light to supply in some measure the diffused light of day, and subsidiary lights of less intensity placed so as to enable the children to see their work without dazzling their eyes. And it is of equal importance to provide a source of light that does not exhaust the oxygen in the atmosphere. The managers of some of the voluntary schools have recognised the necessity of improving the artificial light, and have introduced electricity or incandescent gas burners. Electricity consumes less air, and the lamps can be easily moved until that position is found from which the light is emitted in the most convenient direction.

The subject of artificial light is of special importance at the present time, when the Board are pursuing a large scheme for the alteration and improvement of many of their older schools. Opinions differ as to the details of the scheme. The construction of halls in schools which were designed before such rooms were contemplated is exceedingly costly, nor is the addition by any means indispensable. Mr. Newton makes some valuable observations on this point:—

"The Board has lately made various proposals for the improvement of its older buildings. In the Greenwich division of London only two Board schools are conducted in premises which were not originally built for Board schools; both of these buildings are in some respects unsatisfactory, but both will be closed when certain schemes which are now in progress are completed. In the older schools built by the Board two defects are met with:—(1) The staircases to the upper floors are often narrow and inconvenient, and (2) the desks are often arranged so that the children have to sit with their backs to the light. In other respects the older schools are almost as convenient as the more expensive schools that have been built in recent years. The central schoolroom, with its movable partitions of wood or of wood and glass, does not seem substantially inferior to the central hall, with its rows of classrooms separated by brick partitions. The central hall is certainly convenient for drill, but in the schools of the older type, whatever the weather, drill can be effectively practised, provided that the corridor is of reasonable width. In warm weather the best place for drill is the playground. On the whole, except in the case of very large schools, it is hard to think that the advantages of the hall are commensurate with its cost.

"The Board's methods of improving the older buildings are in general very costly, inasmuch as the plan proposed is usually that of removing staircases and cloakrooms, and building central halls, new cloakrooms and new staircases. A school thus transformed must, as a rule, cost more than a new school of the latest pattern, because staircases and cloakrooms have to be paid for twice over. The transformation is often hardly necessary, as it is nearly always possible to restep the floors and to turn the desks so that the children may have the light on their left, though in some cases the rearrangement may involve a small reduction in accommodation.

"Though the inconvenience which it sometimes causes is undeniable, the narrowness of the staircases is not often a serious fault. In some cases a reasonable expenditure on the improvement of staircases can be justified, but in general the existing staircases are sufficient, provided that the children are taught to use them in an orderly fashion, and that, in accordance with an excellent rule of the Board, fire drill is regularly practised.

"In Greenwich, and probably also in other parts of London, most of the older schools are situated in congested districts. Allowing for the outward movement of population and for the clearance of insanitary areas, some of these schools may in a few years become unnecessary. Where this is likely very large expenditure on renovation is to be deprecated.

"In spite of a suggestion in the Code, the plans of the new schools of the Board nearly always provide for drawing classrooms whether neighbouring schools possess such rooms or not. It does not seem to be understood that all the drawing of the classes below the sixth standard, and the great bulk of the drawing of the sixth and seventh standards, is taken in the ordinary classrooms even when a drawing classroom is provided, and that most of the advantages of the drawing classroom can be obtained by furnishing with black blinds the subsidiary windows of the ordinary classroom. The cost of a drawing classroom when furnished approaches 1,200*l.*, hence the policy of adding these rooms to all new schools is expensive. Expenditure on unnecessary drawing classrooms, like the expenditure on turning old schools into new, is objectionable, not only because it is wasteful, but also because it may provoke a reaction which will interfere with expenditure on things that are really needful. From an educational point of view, it will be unfortunate if some future Board reduces its teaching staff to meet the outlay which the present and past Boards have made upon bricks and mortar; for, after all, it is the teacher and not the bricklayer that makes the school."

Mr. Newton's closing remarks will excite some apprehension in the minds of all who are interested in the progress of education, and who, recognising the excellent effect of the general policy of the Board, earnestly desire that they should avoid the risk of provoking opposition that is even apparently justifiable. The determination to allot a specified sum, and that, too, a very large sum, to alterations and improvements of old buildings, will suggest to some persons that the sum will be spent whether it is required or not; to others, that when this sum is exhausted, no more will be forthcoming for similar purposes, however urgent the need: probably neither suspicion is justifiable, but to ignore their existence is hardly prudent. Such considerations afford material for a lively period from irresponsible journalists or bitter denunciations on public platforms. Is it prudent or judicious to assume that the costly addition of a hall is the only improvement that is needed, and that minor alterations are not worth making? As Mr. Newton observes, some of the older schools possess corridors sufficiently spacious to serve the purpose of a hall for as long a period as the building is likely to last. The result of these insertions is a patched building, subject to all the risks of premature decay where the old and new work join, and to all the inconveniences that occur where such large additions are made in places that were never designed to receive them. Improvements are unquestionably desirable in many of the older buildings. Alterations in the position of internal partitions, so as to adapt the dimensions of the classrooms to the number of scholars instructed in them, reseating in order to place the scholars in the right position with regard to light, better arrangements for warming and ventilation, and, as has already been observed, better arrangements for artificial light—these are improvements that would receive general approbation.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

At a meeting of the above Society, presided over by Mr. W. Carby Hall (president of the Society), held at the old Medical School, Park Street, Leeds, a lecture was given by Mr. A. T. Bolton, the subject selected being "The Dome as the Basis of an Architectural System," in the course of which Mr. Bolton remarked that the dome was not only the grandest of architectural features, but might be regarded also, equally with the vault, as the basis of an architectural system. A tendency existed to regard the dome more as an isolated feature, centralising in character, than as an expression of a principle of covering, capable, as the vault proved to be in the hands of Gothic architects, of pervading the whole structure of the building to which it was applied. The modern dome was an Italian creation, and the numberless examples to be found in Italy presented a series of changes and experiments that marked the introduction of a fresh element of architecture. With the spread of the Renaissance, such studies were carried abroad, and there was evidence that a very wide interest was taken in the problem of the application of the dome at that epoch. There was, said the lecturer, an unfortunate paucity of examples in this country; but the work of Sir Christopher Wren showed the influence of the movement, and though his work exhibited a preference for vaulting and flat ceilings, some very interesting results were achieved by him in the application of the dome at St. Paul's, St. Stephen's, Walbrook, St. Mary-at-Hill, St. Mildred and at two other destroyed churches of a later type. There was no reason to suppose that the Renaissance movement had exhausted itself, or that as the basis of modern European architecture, in a wide sense, it would yet be displaced for a long period. What had happened was that the special interest that was attached to the order system, derived from or associated with Roman architecture, had lapsed, and that consequently lessons might be drawn from a study of the buildings of the Renaissance, independently of the customary architectural features and details of that period. An irresistible tendency to develop would be displayed in architecture when a start had been made on the lines of a possible system. The first experiments were often reckoned as failures, but the future was more indulgent than the present, and a consideration of their importance as links oftentimes gave a credit to buildings that might be denied to them solely on their artistic merit.

The lecture, which was illustrated by a series of capital photographs of the Renaissance period of architecture, was followed by a discussion.

ARCHITECTURAL ASSOCIATION OF IRELAND.

An ordinary meeting of this Association was held in the Grosvenor Hotel, Dublin, on the 20th inst., the president, Mr. F. Batchelor, in the chair.

Mr. T. E. Hudman read a paper on "Georgian Architecture in Dublin," dealing chiefly with the period between 1714 and 1830, which, he said, might be called the "Golden Age" of Dublin, so far as its buildings were concerned. Previous to this many of its men had world-wide reputations, but, architecturally speaking, with the exception of Christ Church and St. Patrick's Cathedrals, Dublin was practically a dead city. During the reign of the Georges the population of Dublin increased from 8,000 to 169,500, and the city expanded from what was little better than a small Mediæval town, with narrow streets and a congested population, into a metropolis, with wide streets and many noble buildings, mainly due to the efforts of "The Wide Street Commission" appointed by Act of Parliament in 1757. This Commission, composed of men of parts and enlightened views, devoted their energies to making what was really a new city, and their first instructions were, "To open an avenue from His Majesty's Royal Palace to Essex Bridge." Subsequent Acts empowered them to carry out other great public works, and in course of time the fine squares and streets, both on the north and south sides of the Liffey, came into existence. History repeats itself, and these schemes of improvement were not carried through without opposition, and it became necessary to employ an army of men to strip the roofs from the houses in some localities before the inhabitants could be persuaded to give up possession. Many of the oldest houses, now rapidly disappearing, were undoubtedly of Dutch origin, but the buildings of the later period, both public and private, as, for example, the Custom House, Trinity College, the Bank of Ireland, the Four Courts, the City Hall, Rotunda, the King's Inns, St. George's Church, Aldborough House, Drogheda House, Charlemont House, Belvidere House, Blessington House and numerous smaller houses, designed by such master hands as Sir William Chambers, Gandon, Cassels, Thomas Cooley, Sproule, Eason, &c., were still with us, and many of them had been well cared for. The striking feature of Dublin was its wide line of streets and squares and the effect of its public buildings so judiciously placed. The lines from College Green to Rutland Square would be hard to beat, not to mention Merrion Square, Fitzwilliam Square and St. Stephen's Green and the surrounding network of streets. The line of quays starting from the Custom House and finishing with the Phœnix Park was a magnificent conception. Unfortunately the controlling influence over some of the buildings en route appeared to have relaxed, and the decadent period set in before the scheme was completed, but even now under certain conditions of sky and atmosphere the view looking westwards from Carlisle Bridge was superb, both for colour and architectural effect.

The paper was illustrated by some excellent lantern slides, chiefly from photos taken by Mr. Hudman and Mr. Black, and the various buildings shown were briefly dealt with, both historically and architecturally, and the careers of some of the eminent architects sketched.

Mr. Hicks proposed a cordial vote of thanks for Mr. Hudman's delightfully interesting paper, which was seconded by Mr. F. Shaw, of Dundalk, and supported by Mr. Allberry and Mr. Sheridan, and carried with acclamation.

A novel scheme of practical education for intending architects has been inaugurated by the above Association. Four years since it started on its career, and its membership has increased so rapidly that it now ranks with the largest societies in England and Scotland, with the exception of that in London. The scheme mentioned is one of technical demonstrations to be held each Friday at the workshop of some leading firm connected with the building and decorating trades. Each trade will be taken in rotation, commencing with the bricklayer and finishing with the glazier, and at these demonstrations the craftsman will be seen at work and experiments will be conducted on the various materials used by him. Such practical instruction will be of great value to the student when practising his profession in later years. It is to the credit of this young Dublin society that it has drawn up so advantageous a scheme for its members, on lines which have never been so broadly tried on the other side, and also of the manufacturers and builders who have readily placed their time and plant at the Association's disposal. The first meeting was held at the works of Messrs. H. & J. Martin, Grand Canal Street, when experiments were conducted on the durability of bricks, mortar, cement and asphalte.

STIRLING NATURAL HISTORY AND ARCHÆOLOGICAL SOCIETY.

THE usual monthly meeting of the above Society was held in the Y.M.C.A. Rooms, Stirling, on the 20th inst., Mr. Lowson, president of the Society, in the chair. The minutes of last meeting were read and approved. The Society agreed to enter in the minutes an appreciation of the services of the ate Dr. Galbraith to the Society since its formation, and instructed Mr. Morris, the secretary, to send a copy of the minute, along with an expression of sympathy for his family in heir great loss, to Miss Galbraith. Mr. Sword indicated what e was doing on behalf of the Society to assist the newly ormed teachers' class in nature knowledge. Mr. A. F. Hutchison, emeritus rector of the High School, read a short note on "Cornelius Alexander on St. Paullis Epistoles," being n addition to a former paper on "Old Stirling Library" read y him in 1897. He also read a most interesting and exaustive paper on "Capella Beate Marie de Dundafmure" Kirk o' Muir), which is a very valuable addition to local istory. After some discussion, in which Mr. W. B. Cook rew more light on the history of the chapel, derived om private unpublished documents he had once been rivileged to see, Mr. Hutchison was most cordially thanked or his paper. Mr. D. B. Morris read a short note on a stone pinning whorl found on the farm of Glenwhilk, Dunblane, by r. M'Laren, who now presented it to the Society for their ollection in the Smith Institute. A vote of thanks to the hairman concluded the business.

The Next Ordinary Meeting of the Society of Engineers ill be held on Monday, December 3, at the Royal United ervice Institution, Whitehall, when a paper will be read Mr. Henry C. H. Shenton, entitled, "Recent Practice in ewage Disposal."

TESSERÆ.

Pliny as a Writer on Art.

IT is evident that Pliny frequently did not clearly understand what he has endeavoured to convey to others, and the consequence is that he is sometimes unintelligible; yet this may be partly owing to the corrupt state of his text. He also lavishes encomiums upon the most trivial objects and examples of purely mechanical excellence and passes cursorily over the greatest works, as the paintings of Polygnotus at Delphi and the Jupiter of Phidias at Olympia. Of the Laocoon, however, he says that as a work of art it was superior to any production either of painter or sculptor; and with him the art of Apelles is synonymous with unrivalled excellence. He commences his historical sketch, but more particularly that of painting, from the time of Polygnotus and Phidias; everything that took place before that time he very summarily terms the incunabula, or first efforts of art. His immediate authorities probably gave him no satisfactory account of an earlier period. Concerning this period, however, he has given us many valuable though unconnected remarks. Yet, when we consider the original sources that he appears to have consulted—the writings of ancient painters and sculptors, the works of Apelles, Euphranor, Antigonus, Xenocrates, Pasiteles and Menaechmus, all of which are mentioned by Pliny himself (and there were many others that he might have consulted), the volumes of Melanthius, Pamphilus, Protogenes and others—we cannot help feeling surprise that he has given us so little, and we are induced to conclude, with Fuseli, "that he was more desirous of knowing much than of knowing well." However, out of about one hundred artists of great celebrity, of whom more than the third were painters, the rest sculptors, statuaries and workers of gems, &c, and more than twice that number of artists of less note, whose names have been handed down to us, Pliny has scarcely omitted one name of importance, but has, on the other hand, preserved notices of the works of many artists of whom we have no mention whatever in any other ancient writer. In his dates he seldom errs. Flaxman, speaking of Pliny's "History," says the whole is "arranged with attention to the several improvements in chronological order with such perspicuity and comprehension that whenever, from the brevity of the work, we do not find all we wish for—yet, by attending to the information prior and subsequent, we shall easily be enabled to supply the defect from other writings or monuments of antiquity."

Lombardic Columns.

Among the characteristic peculiarities of the Lombardic style, the following may be enumerated as the most obvious and the most general:—Columns with cylindrical shafts, and varying greatly in their proportions, some being of the average height of the Roman orders, others extremely short, either in proportion to their diameter or their capitals, or else exceedingly tall, and when attached to walls elongated into a mere rod, or vertical convex moulding, surmounted by a capital. Instances of fancifully-shaped or decorated shafts are by no means unfrequent, some being zigzagged horizontally, or polygonal in plan, or embossed with sculpture, or either twisted or cut into spiral grooves and mouldings. Equal diversity—not to call it extravagance—prevails in the capitals, which, as far as general mass and outline go, bear some analogy to the Corinthian. If, however, some capitals are much decorated, others are nearly plain, and these are frequently in the form of an inverted cone, cut in such manner as to present four flat sides or faces, which again are occasionally more or less ornamented. In bases there is much less variety, they being for the most part only a series of mouldings in rude imitation of the common attic base. But one very great singularity in this style connected with columns is that of placing them upon the backs of couchant animals or other figures, which serve as pedestals to them. Whimsical as it appears to us, it may very probably have originated, not altogether in caprice, but have been occasioned by employing materials and fragments taken from ruined edifices, where columns, being found too short for their intended situation, were raised or stilted up by being set on other fragments, for which purpose remains of sculpture may have been adopted, either because they chanced to be at hand or because considered more ornamental and as adding richness to the column itself. Upon the same supposition we may easily account for the great variety of columns and capitals in the same building, namely, that they were ornaments collected at random from the remains of other structures, and that the irregularity thus occasioned in the first instance grew by degrees to be a matter of taste, and was adopted out of choice. Columns of the kind just specified were, however, by no means very usual, and are chiefly to be met with in those forming porches or decorating the chief entrance to a church, as in that of San Ciriaco at Ancona, and in San Zeno at Verona. Although not invariably so, columns are to be understood as accompaniments to arches which spring from them, and arches applied in different ways are very predominant features of the style. Besides giving the form to doorways and windows, they were employed for decorating the faces of walls in very nearly the same manner as in the kindred Norman style.

Giulio Romano as Architect.

Giulio Pippi, commonly called Giulio Romano, well known as the second name in the Roman school of painting, has an equal title to rank high as an architect. In Rome he designed the Villa Madama, with a palazzino now ruined; above S. Pietro Montorio another palazzino once in possession of the Duca Lante; the plan of the church of the Madonna dell' Orto; Palazzo Cicciaporci in the Strada di Banchi; and that of Cenci in the place of S. Eustachio, contiguous to the Palazzo Lante. The Duke of Mantua, enamoured of Giulio's talent in architecture, left nothing undone to draw him thither, and when he had effected it treated him with great distinction. The Palace T (so called from the resemblance of its ground plan to the form of that letter), built by him a little out of Mantua, is one of the most renowned edifices in Italy. In addition to the merit of its construction it has to boast some of the noblest efforts of his pencil, in particular the Hall of the Giants, where their fall is represented in a style correspondent to the magnitude of the subject. This invaluable work suffered greatly by the barbarism of Pandours and Hussars, who used it as a guard-room in the war terminated by the peace of Aix-la-Chapelle in 1748. He modernised and enlarged the ducal palace, and built another at Marmiruolo, five miles from his capital, for the same sovereign. In Mantua he erected a house for his own residence, and there refitted the church of St. Benedict, of the religious of Monte Cassino, and rebuilt the dome. There, indeed, and in the vicinity his works of architecture are so numerous that the Cardinal Gonzaga used to say that Mantua was a creation of Giulio Romano, and all there his own. His design for the front of S. Petronio was deemed the most suitable of several presented by celebrated architects. Arrived to the fulness of his fame, it was confirmed to him by his appointment to the envied charge of architect of St. Peter's of the Vatican. Resolved to remove thither with his whole household, and in actual preparation for a departure not a little displeasing to the Duke of Mantua and his own family, he was seized with an illness that, in the issue, finally closed his labours and concerns in this life. The buildings he left unfinished in Mantua were carried on by Bertani, who erected the church and campanile of Santa Barbara, called the Quattrizonio, the best in Italy.

Ancient Sundials.

The solar equinoctial dials used in Egypt, by which Eratosthenes metred or verified the measure of the earth, were concave hemispheres, in the middle of which was a perpendicular stylus. The dial introduced by Anaximander at Lacedæmon was of this kind, to indicate the equinoxes, solstices, and by their means, the seasons. The Phœnicians and Pherecydes claim the honour of the invention. Dr. Clarke mentions more than one like that in the Elgin Collection, and another similar was found at Pompeii. At Orchomenus, on the wall of the church, is an ancient dial, upon which Dr. Clarke makes the following remarks. The gnomon has long disappeared, but everything else is entire. The *στοιχεῖα*, letters of the dial, for numbering the hours by the earth's motion, were ten in number, ΑΒΓΔΕΖΗΘΙΚ, and these were all sculptured in relief upon the surface. This dial is probably not of remote antiquity. At Constantinople, upon a column, he saw a brazen eagle, with a serpent in his talons; and the horary division of the day was marked by lines on its wings. The Romans were long ignorant of the construction of them, for A U C. 304 they used one adapted to Catana in Sicily. The ancients sometimes placed them on cippi or small columns. In 1759, at Nettunt, the ancient Antium, was found a vase of silver, upon which a dial was seen in this position. Paciaudi has published and explained it, as well as another, the lines of which are traced in cinnabar. Boissard has given some at the head of a marble calendar. The different dials in the Portici Museum are very rude. A single crooked hook casts the shade, and the time of day is not denoted by numbers. One small dial is in the form of a ham, the tail of which served for the needle. It is portable, and made of bronze silvered. Upon the back of the ham are described seven vertical lines, under which are abbreviated the names of the twelve months, beginning with January, retrograding to June, and again returning to December:—IVN. MA. AP. MA. FE. IA. IV. AV. SE. OC. NO. DE. Seven other lines traverse the above, and by their intersection with these show the extension of the shades thrown by the gnomon on the sun's entering each sign of the Zodiac, and consequently at every point in his path through the ecliptic. This likewise points out the hours of the day, the shadow descending with the rising and again ascending with the setting sun.

The Will in Art.

There is no quality of more importance to the attainment of success in any pursuit in life than a resolute will, undaunted by failure, to accomplish the end in view. More than all other workers does the artist need it, for he is surrounded by influences of so varied a character that if he be of too sensitive or diffident a nature he will often be led to mistrust his powers, and to believe that either the object he has in view is not worthy of attainment, or else that the means taken to accomplish it will be ineffectual. Now no great work can ever be fully performed without a proper amount of confidence on the part of the artist, for the belief that success will be attained, coupled with the modesty and good sense to acknowledge a partial or total failure, will ever lead to more successful efforts. Such confidence as arises from the knowledge of one's own earnestness, integrity and industry is an unerring sign of health and strength, and very different from that which is merely the result of a blind belief in natural ability. We talk of innate power and regard certain qualities as our birthright, without inquiring how much of what we ascribe to nature might be more justly ascribed to the force of circumstances alone. Because we cannot trace step by step each circumstance that contributed to the attainment of the excellence we admire we are too apt to consider it the gift of nature. Truly a consolatory belief and an easy method of getting over the difficulty, but rather apt to interfere with our individual efforts.

GENERAL.

No. 28 Leicester Square, which is now in course of demolition, was the residence of John Hunter, whose famous anatomical museum, since purchased by the nation, was erected in the rear.

The List of Subscriptions towards the memorial to the late Mr. C. J. Symons, the meteorologist, will be kept open until the end of January. The memorial is to be a gold medal periodically awarded by the Royal Meteorological Society for distinction in that science.

Plans submitted by Mr. Rudyard Kipling for a large corrugated iron shed at Rottingdean were approved at a meeting of the Newhaven Rural District Council. The shed is stated to be for a Morris tube range.

The Bishop of Bath and Wells has dedicated and opened the new church tower of St. Nicholas, Henstridge, which has been erected by voluntary subscription at a cost of 2,000*l*. Six new bells were also dedicated.

Plans are to be prepared of a stone and brick bridge, as well as one of iron, to be erected in place of the present town bridge at Guildford. The cost is expected not to exceed 6,800*l*., of which the borough will find 3,800*l*. and the County Council 3,000*l*.

Mr. C. M. Atkinson, the stipendiary magistrate at Leeds, has decided that a builder who was summoned under the Factories and Workshops Act was not obliged to place an abstract of the Act on a building site, or to fence the fly-wheel of a mortar mill.

The Winter Exhibition of the Royal Society of Painters in Water-Colours will open in the Galleries, Pall Mall East, on Monday next.

A Committee has been formed in Paris to organise the French section in the Glasgow Exhibition of 1901. Honorary president, M. A. Ancelot; president, M. E. Dupont; vice-presidents, MM. Layus, Sandoz and Amson; general secretary, M. Geo. Lamaille; secretaries, MM. Blondet, Mouilbeau and Doll; treasurer, M. Simon.

The Edinburgh Architectural Association held its opening meeting last Wednesday. The president, Mr. H. F. Kerr, took as the subject for his address "A Visit to Melrose Abbey," illustrated with limelight views. During the session Mr. G. S. Aitken will lecture on "Bothwell Castle" and Professor G. Baldwin Brown on "Colour in Architecture;" Mr. J. M. Bryden will deal with "The Work of Cockerell" and Sir John Sibbard with "Lunatic Asylum Design from a Medical Point of View."

The Bridges Committee of the London County Council propose to supplant the present Lambeth bridge by a five-arched granite-faced concrete bridge, which is estimated to cost 308,000*l*. A suspension bridge would cost 214,000*l*., a steel-braced arch structure 236,000*l*., or 305,000*l*. if it be of five spans with steel arches. The present bridge was finished in 1862, at a total cost of 48,924*l*. The Brothers Barlow were the engineers. It is recommended that a design similar to the one that is being erected at Vauxhall should be adopted.

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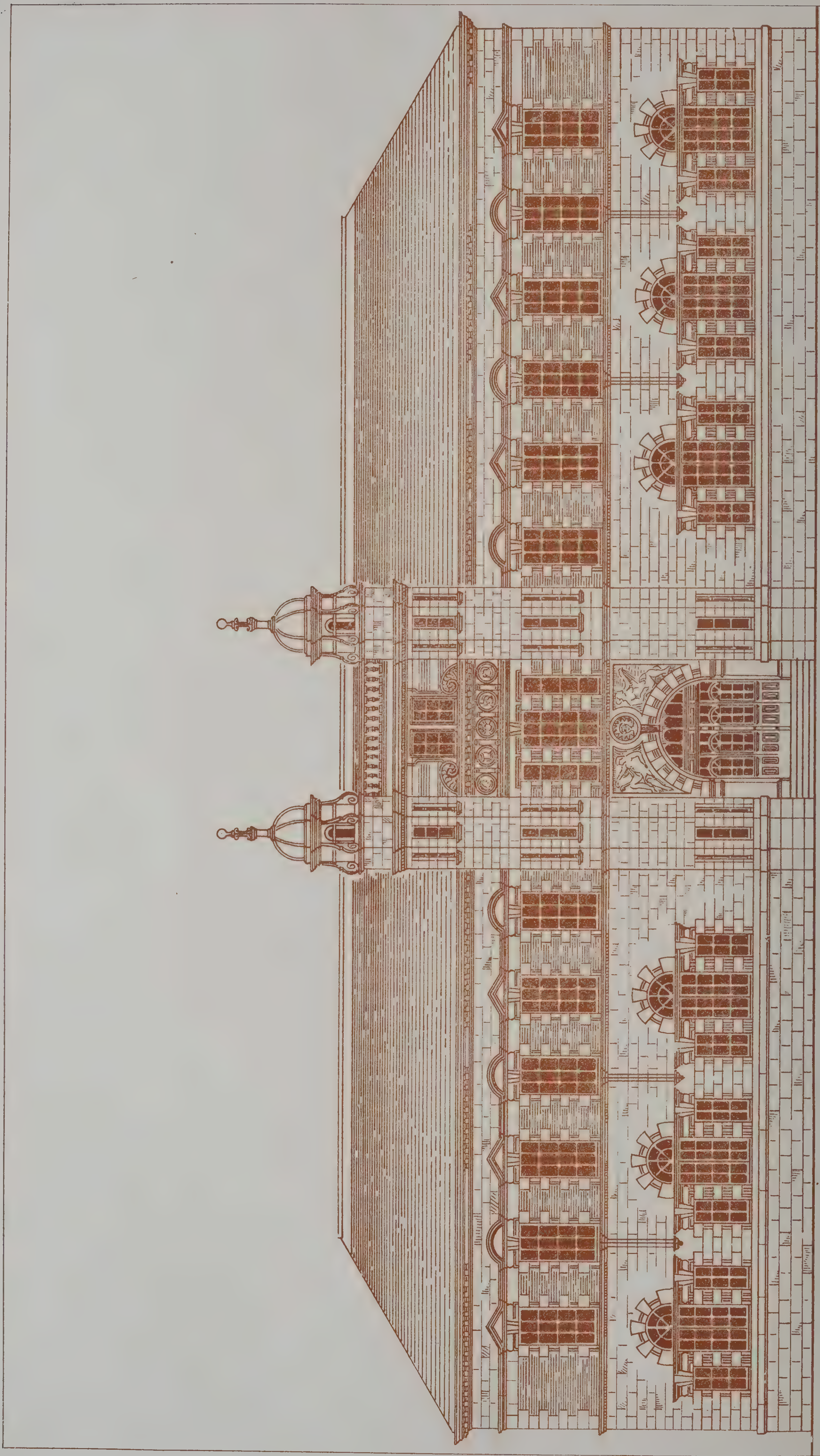

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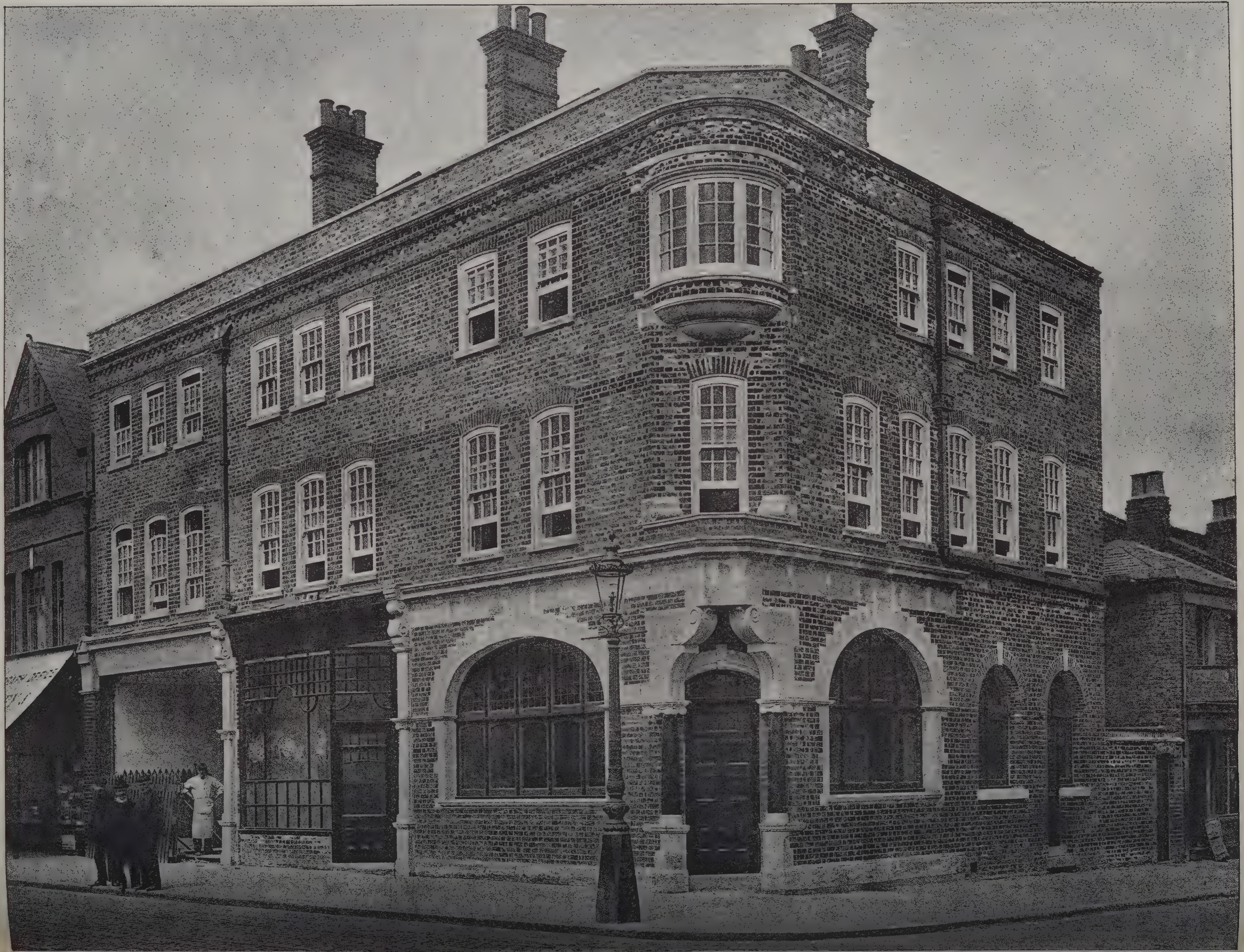

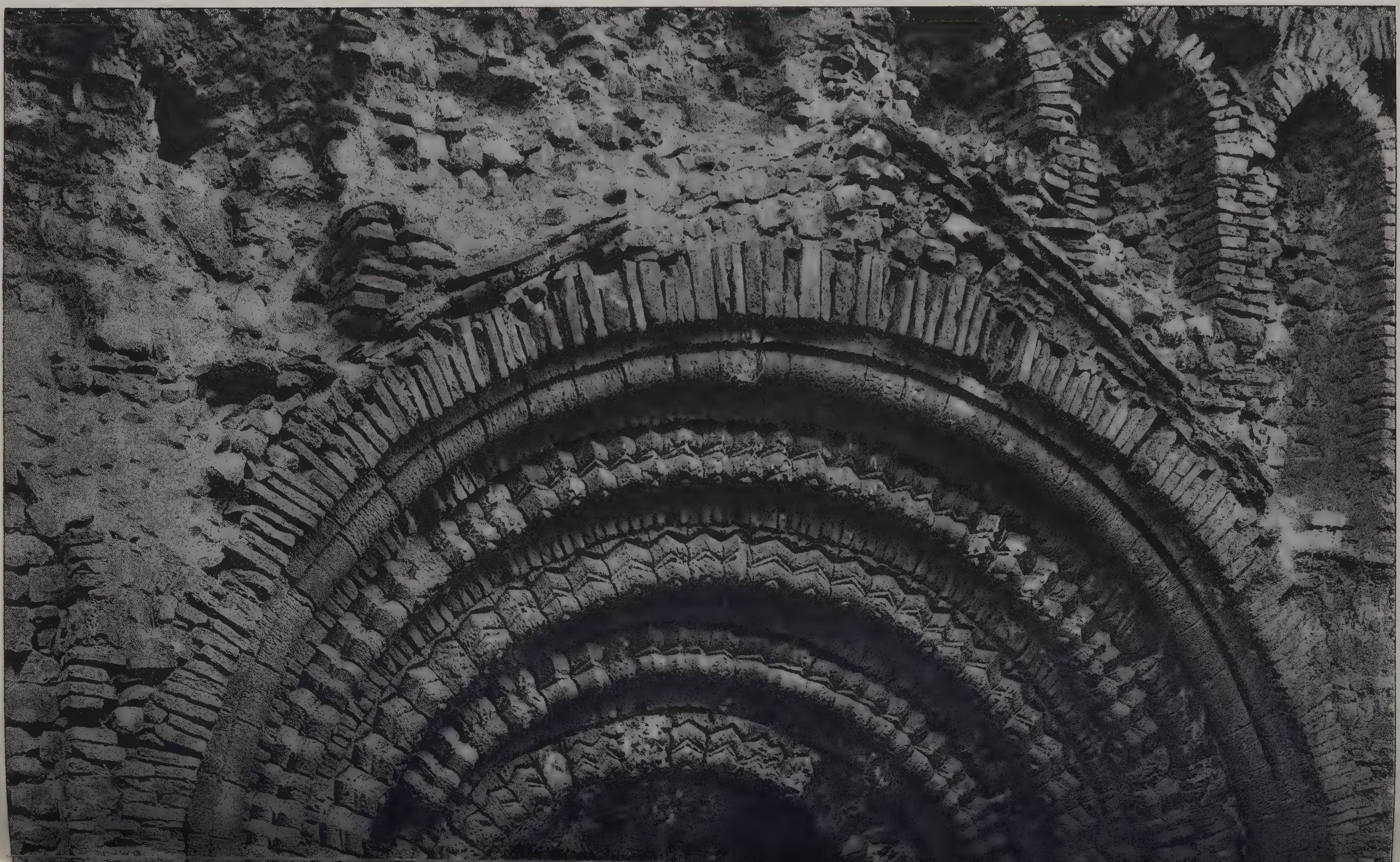

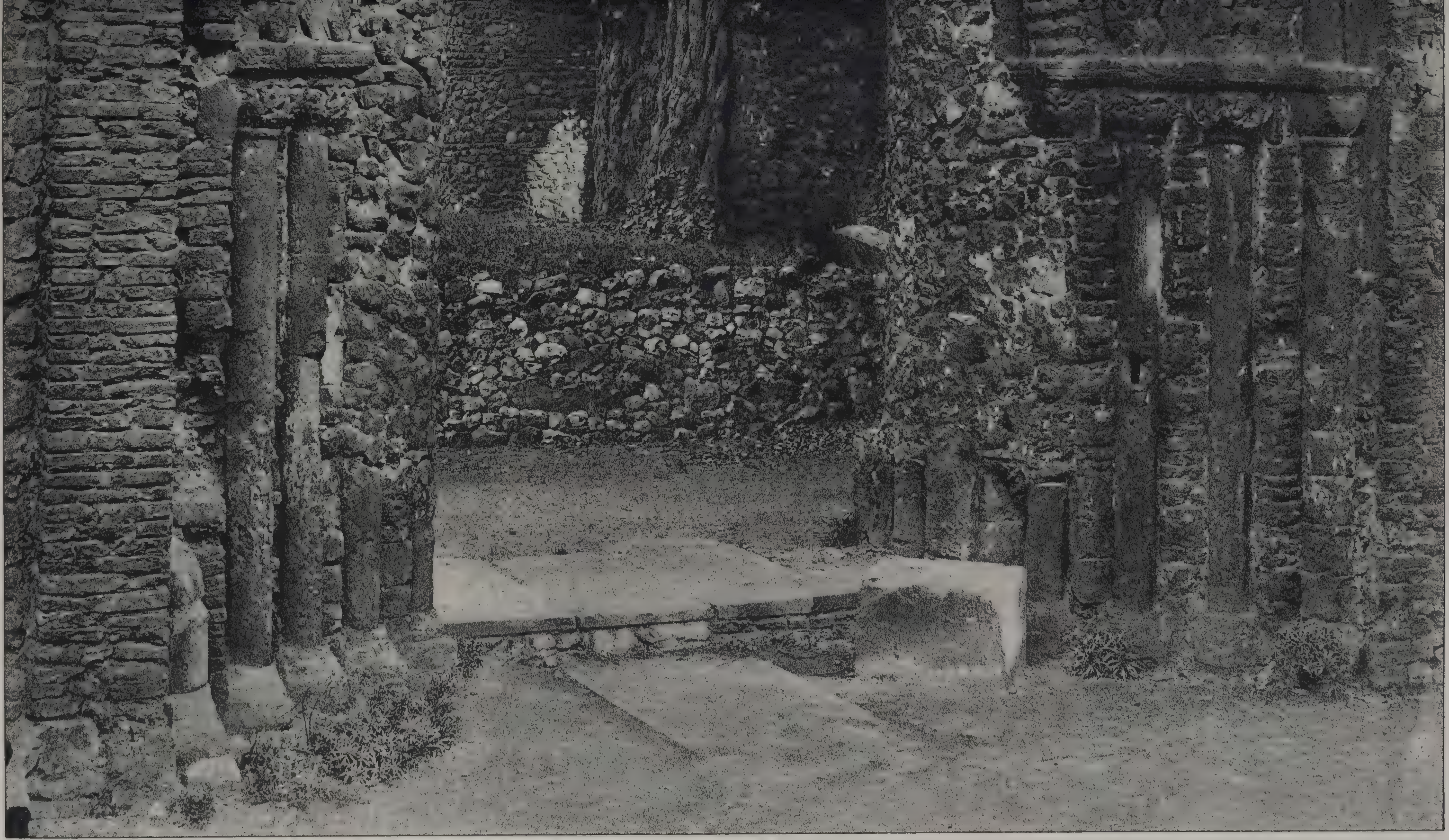

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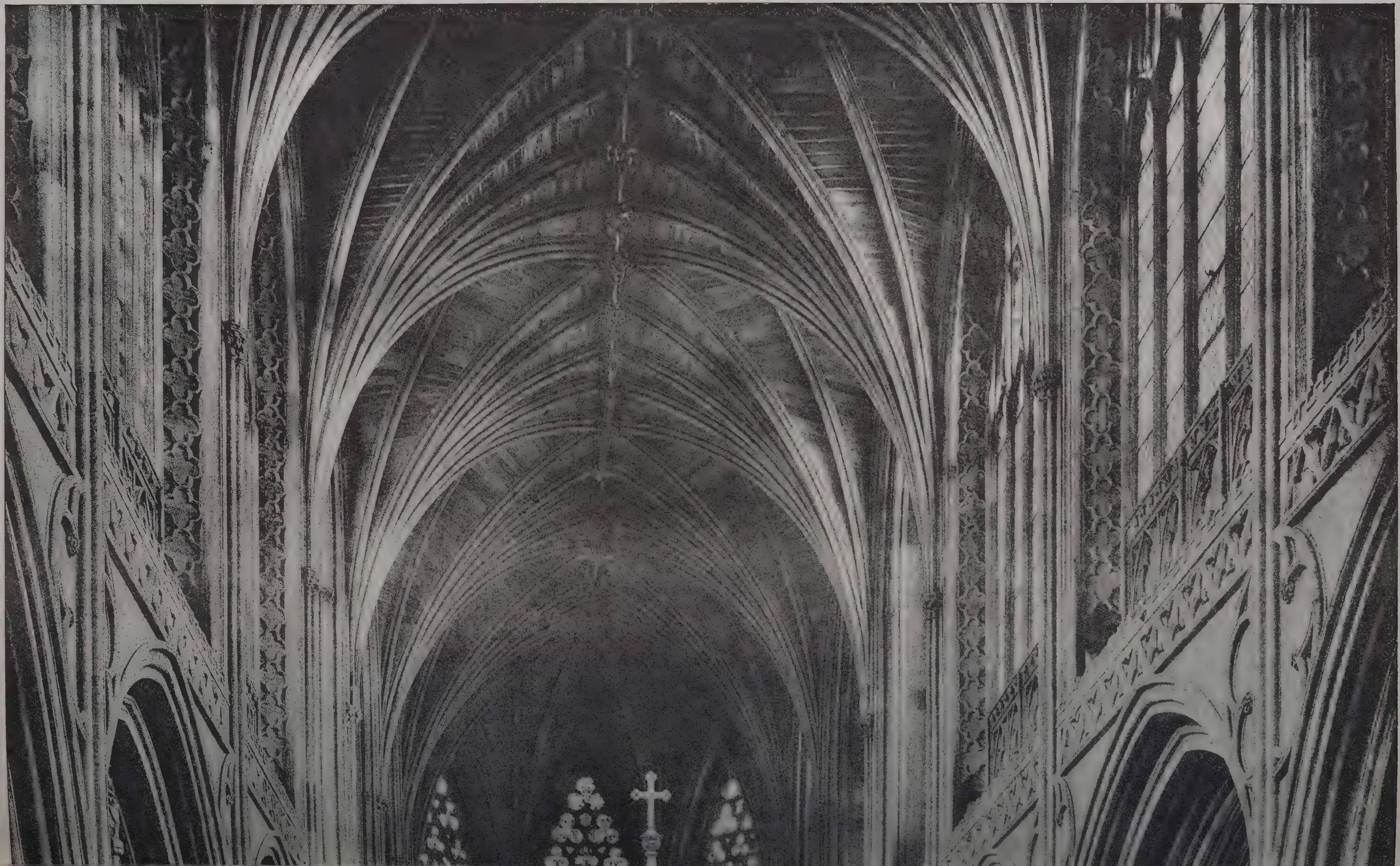

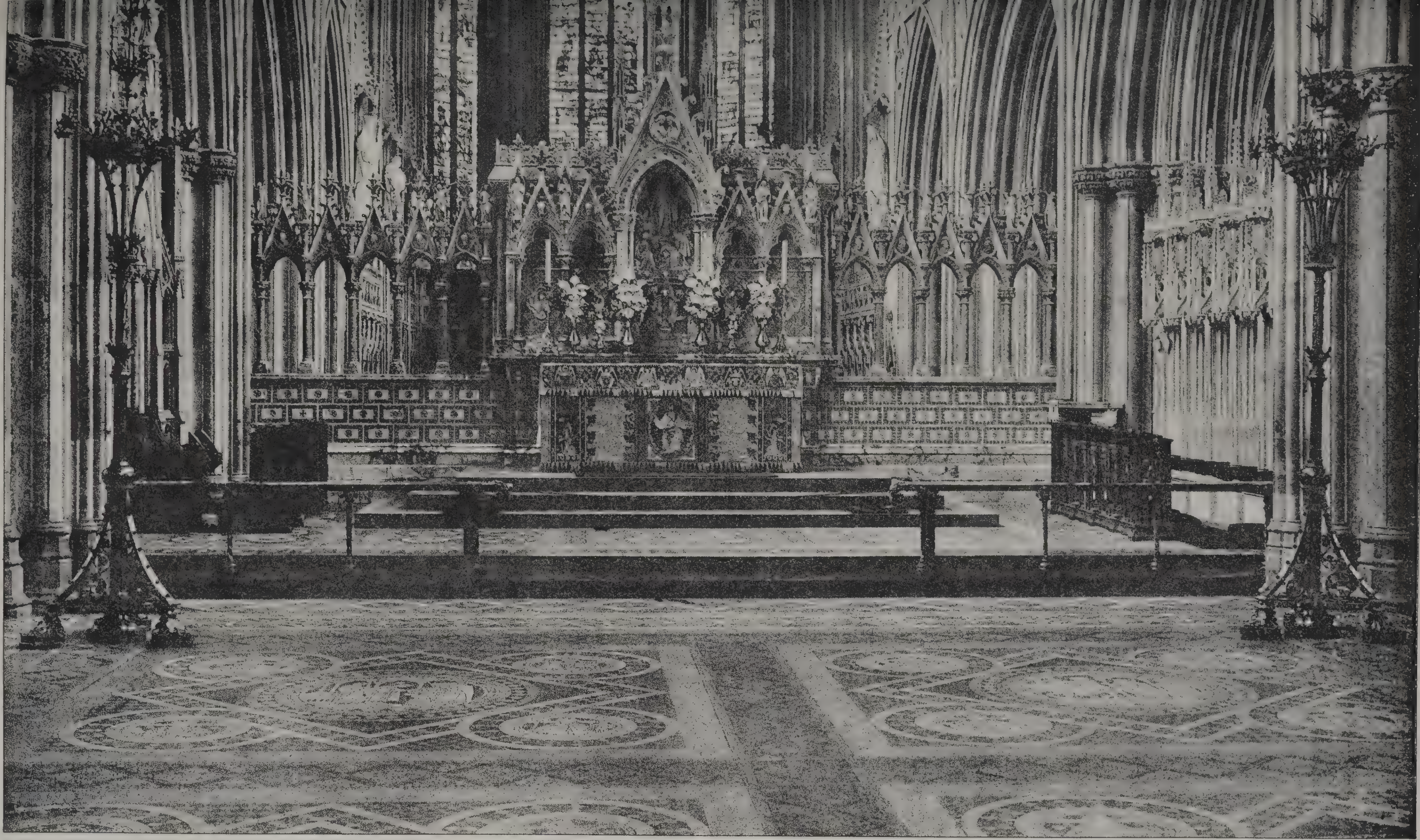

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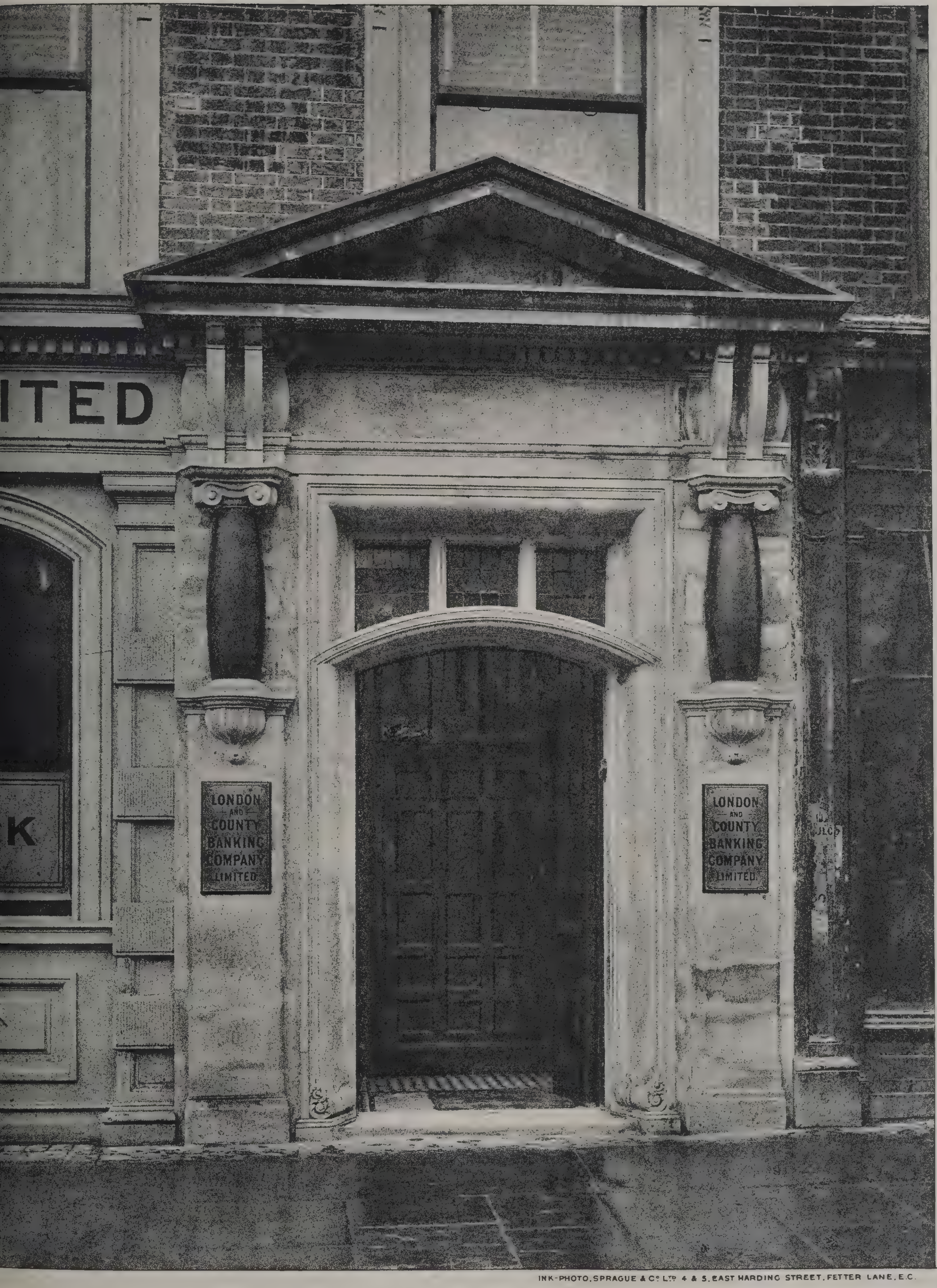
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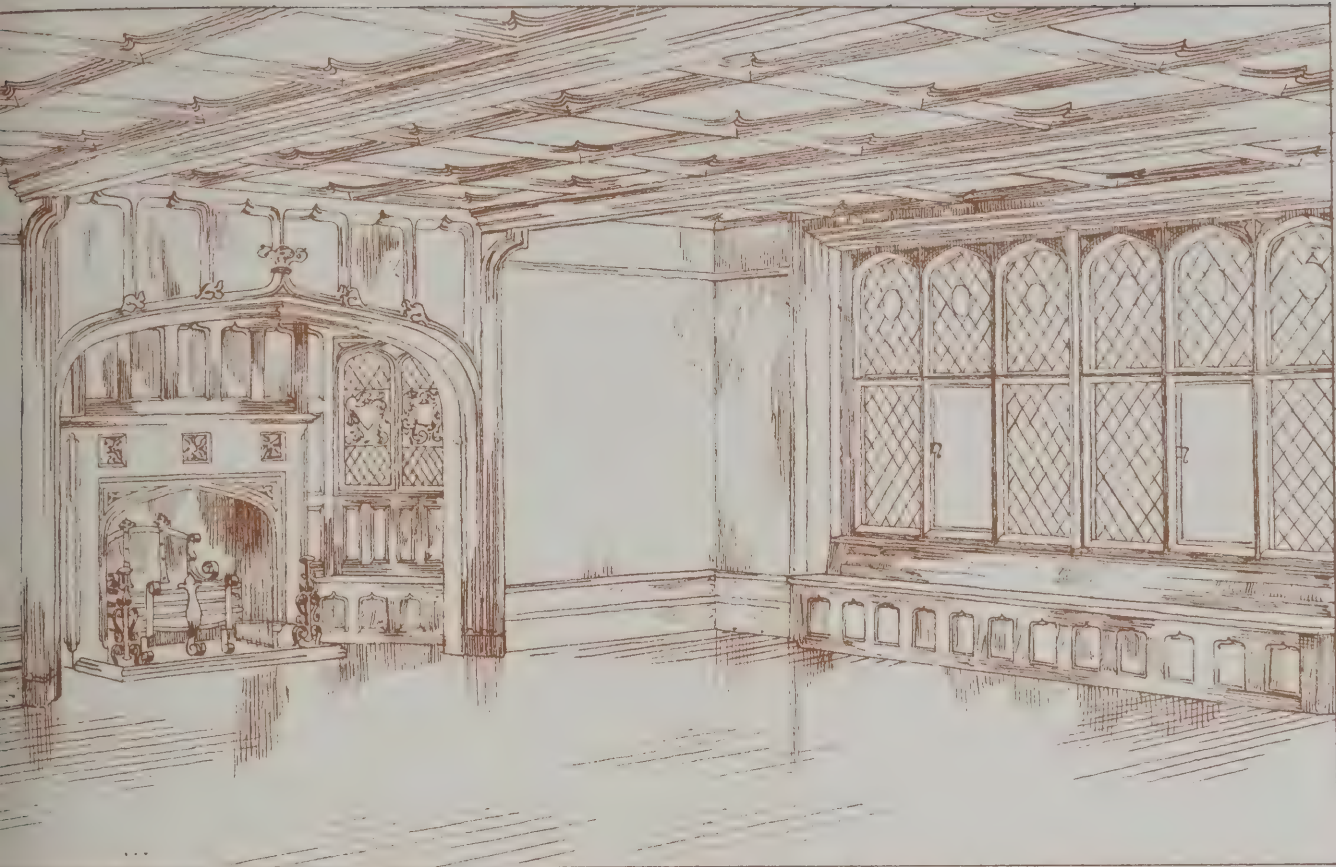
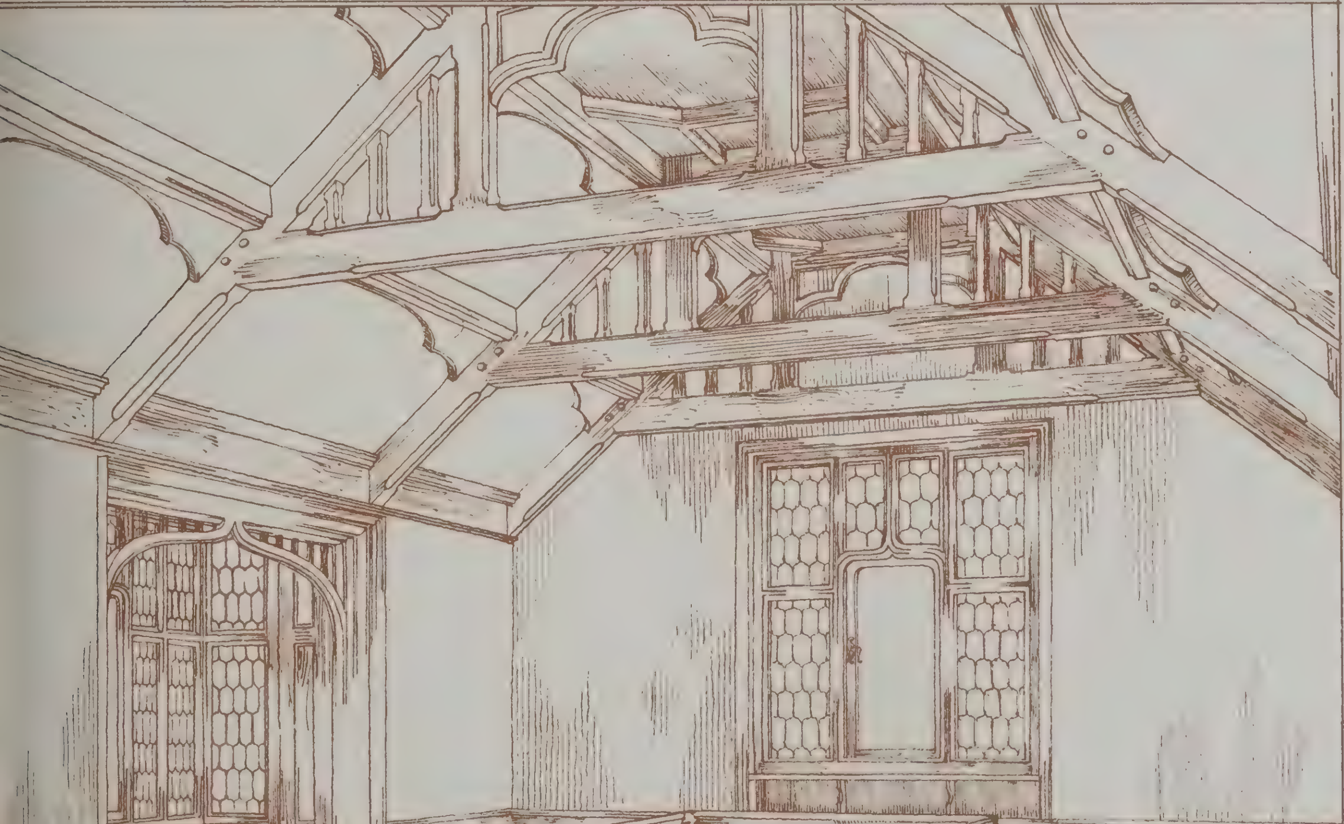


DRAWING ROOM · THE CASTLE HOUSE · HORSELL · F. MEESON. ARCHT.



BILLIARD ROOM. BELMONT LODGE, HARROW WEALD F. MEESON. ARCHT.

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The Architect.

THE WEEK.

When architects rashly condemn the architectural works which are connected with engineering enterprises they are not aware how often their criticism has been excited by fellow architects. A civil engineer rarely meddles with the details of a building, since his designing power is reserved for something which is much simpler and more profitable. A remarkable example is presented by the career of the late Charles Henry Driver, an architect who was largely employed by engineers. He was born in 1832, became an Associate of the Institute of Architects in 1867, and a Fellow in 1872. In 1865 he prepared the whole of the designs for the railway stations of the South London line from London Bridge Viaduct to Peckham Rye and Grosvenor Road, for the late Mr. R. Jacomb Hood, C.E., and the stations at Dorking, Leatherhead, Mickleham, Portsmouth, &c. About the same time he loyally assisted Sir Joseph Bazalgette in designing the pumping-stations for the main drainage works at Crossness and Abbey Mills. Perspective views of these stations were exhibited at that time in the Royal Academy, and they now hang in the board-room of the London County Council in Spring Gardens. These drawings were produced in Mr. Driver's office by Mr. W. F. Potter, and they were coloured by Mr. Brewer. Mr. Driver also designed the architectural work of the Victoria Embankment wall and river stairs, and also many of the ornamental lamps and ventilating shafts over the Metropolitan sewers. Among other works in which he was independent of engineering control were the Dorking Town Hall, Banbury Hospital, restoration of Warkworth Church, the Sir Tatton Sykes and Ellesmere memorials, and many private houses, &c. Mr. Driver likewise designed the Mark Masons' Hall in Great Queen Street, W.C., of which fraternity he was an active member. We understand that his practice will be continued by his eldest son, Mr. C. H. Driver, in partnership with Mr. Stanley Barrett, a former pupil of the late architect.

Magistrates are becoming more disposed to regard various kinds of contractors' plant as dangerous machinery. Mr. C. J. Wills, who was carrying out some railway extensions at Ilford, was summoned a few days ago before the Stratford Bench because an inspector of factories on September 25 saw two circular-saws and a drilling-machine not fenced in one of the sheds. A few days afterwards fencing was put up, showing that the contractor was not opposed to what he considered was an innovation. There is no doubt circular-saws can be dangerous, and it is not surprising that 8 per cent. of last year's accidents were caused by their agency, but we think it will be found the casualties arose in saw-mills, which are factories within the meaning of the Act. The slow speed adopted in a builder's shed, and the general manner in which the operations are conducted, are not likely to cause many dangerous accidents. The Stratford magistrates, however, thought otherwise, and a fine of 5*l.* was imposed, with 1*l.* 19*s.* 6*d.* costs.

There are no public servants who are less generously remunerated for their services than the assistants to the county surveyors in Ireland. Long ago their duties were simple, the most difficult perhaps being the measurements of the lengths of those parts of the road which were occasionally repaired. But of late years their duties have been increased, while there is little or no alteration in the salaries. It was expected that the institution of county councils in Ireland would have gained for the assistants reasonable payment. It is discovered, however, that the new bodies have inherited all the parsimony of the grand jurors and others who used to rule the counties. The meanness of the pay offered to skilled assistants cannot be defended by the councils, and they do not attempt to do so. They endeavour, however, to attain their ends by that masterly inactivity which is one of the evils of local government in Ireland. A test case has just been tried which will suggest the spirit of the county councils. An assistant applied for an increase of pay, and not succeeding he appealed to the Local Government Board. That body sent an order to the county authorities that the assistant's pay was to be increased. The council resisted on the ground that the Local Government Board could not dictate to the county council on such matters. The case was tried in the Dublin courts during several days, and on Saturday last the Lord Chief Justice decided that the procedure of the Local Government Board was not in excess of their powers, and the Court could not interfere. This, it is to be hoped, will be taken as a warning by county councils, and henceforth their surveyors and assistants will probably be treated fairly.

When it was found that owing to the International Exhibition there was a likelihood of no space being available for the annual display of the works of the members of the Société des Artistes Français, it was decided to erect a temporary building on the Place de Breteuil. The necessities of the younger members, who depended on the sale of their pictures and statues, were considered too urgent for any hesitation in dealing with the financial difficulty. It is now found that the deficiency which has to be met is larger than was anticipated. The sum which has to be made up amounts to 292,993 francs, or nearly 12,000*l.* The whole reserve fund of the Society is 284,006 francs, and it will be necessary to draw on the benevolent fund for the balance. It is, therefore, earnestly desired by all friends of the Société that the Salons of 1901 and following years will receive a sufficiently liberal support to enable its finances to be restored to their former satisfactory state.

The position of the French bishops in relation to examples of Christian archæology is not easily defined. The State is supposed to be the supreme owner, and the bishops and clergy have only temporary custody. The department for the conservation of historic remains is also strict in case unofficial alterations take place. Under those circumstances the action of Monsgr. Dubillard, the Bishop of Quimper, is remarkable for its courage. He has decided to insure, as far as he can, the preservation of the archæological treasures which remain in and around the churches of Finistère, of which he has charge. In an epistle to the clergy he directs that care should be taken of the "calvaries" and any other works which exemplify the ancient ritual. In the ecclesiastical seminary of the diocese a chair of archæology and ecclesiastical architecture is to be founded, of which the first occupant will be the Abbé Abgrall, a local archæologist. A special commission, consisting of laymen as well as ecclesiastics, will also be instituted to watch over the preservation of religious monuments, such as altars, pulpits, church furniture, &c., and without its authority no reconstruction, sale, or exchange is to be attempted. If any statues are considered old-fashioned, and are to be replaced by the glaring figures from the Place St. Sulpice in Paris, a refuge for the ancient sculpture will be found in the bishop's palace. We hope Monsgr. Dubillard will not excite the wrath of the civic authorities, but as a cardinal was lately fined 2 francs for taking part in one of the ceremonies of his church, it may be treason to show respect for antiquity in a pastoral letter.

Is money more abundant among French than English architects, and from that cause can they indulge in confiding large sums without taking the simplest precautions? We ask the questions because of a case which is now engaging the attention of the Paris police. An architect of that city—there is no use in giving his name, for it would be strange to most of our readers—on Saturday last sent one of his employés to make some payments and handed him 14,000 francs. As he had not returned information was given in the evening to the local commissary of police. But it was so incomplete there is doubt whether the agents can act on it. The architect could not tell the name of his assistant nor give any clue to the place where he resided. Although he was considered trustworthy he had been only a few days in the office. The incident is strange and unlike any recorded in the annals of London offices.

UNDERGROUND RAILWAYS.

About thirty years ago, when it was proposed to construct a Central London Railway leading from Addison Road to the Mansion House, the Bill by which powers for that purpose were sought was not even allowed to reach a committee-room of the House of Commons. On the first reading its rejection was moved by one of the Grosvenor family, and, what was unusual in the case of private Bills, several hundred members voted against the introduction of the measure. One of the reasons for the rejection was that the proposed line in running south of Oxford Street interfered with the Grosvenor estates. A second attempt was subsequently made, and the Bill was permitted to come before a committee, but it failed to become law. It was known at the time that the Metropolitan Board of Works was favourable to the scheme, which would have allowed of several street improvements to be carried out on economical terms, but the influence of the Board was outweighed by the opposition of the owners of property along part of the line.

Time, however, generally vindicates ideas which are of use. There is now not only a Central London Railway running from east to west, but although only a few months open it has apparently a larger amount of passenger traffic than any line within the metropolitan boundaries. A diameter has been provided for the irregular "circle" of the District and Metropolitan lines. One advantage of the Central London Railway arises from the employment of electric power instead of steam. Several other lines on which similar motive power will serve for traction will soon be available, and residents in the northern and southern suburbs will be able to make their daily journeys to and from London with as much facility as they can now travel from Shepherd's Bush to the City.

It is premature to determine the exact measure of success of underground tubular railways in London, for the data required for financial calculations are not as yet forthcoming. But the appearance of the carriages every day on the Central London Railway is enough to excite the imagination of railway promoters, and as a consequence the number of Bills lodged in Parliamentary offices on the last day of November is unprecedented as regards the Metropolis. It cannot be said that a map of London showing the projects presents the appearance of network, for it is inevitable when the Bank of England and its immediate surroundings become the centre that all lines should converge there. As is the case with the principal thoroughfares, the general direction of the majority of the new lines is from west to east. But if the Bank is especially the business centre, owing to its important financial position, there is a likelihood of the creation of another centre at Piccadilly Circus, or it may be Charing Cross, by means of which facility of communication would be simplified between north-western and south-western districts. The Bank, however, is the goal of all the lines, and Trafalgar Square or Charing Cross is only a means to render its approach more easy.

It must be admitted that at a time like the present there is no public authority with sufficient power to consider the advantages of the Metropolis if taken as a whole. Each project is only a speculating enterprise, and the promoters are not to be blamed if they make profit to themselves paramount to the public interests. It is true that their failures will fall on themselves alone, while if their lines are profitable it is manifest the public must have gained by the new means of communication. But when we find there are schemes for which Acts have been passed, and which are not in operation through various causes, lack of capital being the principal, it is evident that application for a Bill may sometimes be no more than an effort to obtain a privilege in the shape of a monopolising claim to a part of underground London. The directors of the Great Northern Railway, for example, found little difficulty in obtaining an Act seven or eight years ago for improving their branch line between Finsbury Park and King's Cross station on the Metropolitan Railway, a line which was the most unsatisfactory of all about London; but passengers have not yet gained anything by the project. Many people are also hopeless about seeing the Great Northern and Strand Railway constructed by the Great Northern Company. In 1897 an Act was passed for the construction of the Brompton and Piccadilly Circus Railway, but apparently the most important work yet done in connection with it is the application for extensions of the line, which is still on paper. Although the original Act for the Charing Cross, Euston and Hampstead Railway dates from 1893, it is not more advanced than the project just mentioned. The City and Brixton Railway Act was passed in 1898, but it remains *in nubibus*, if such a phrase can be applied to anything subterranean. There are other Acts conferring powers to construct lines which have not yet been exercised.

With so many examples of delay, if not of failure, it is impossible to determine how many of the Bills for underground railways in the Metropolis for which plans have just been lodged relate to works in the future. The extension of the Central London Railway to Liverpool Street, if the Bill should be passed, will without any doubt be constructed. A couple of lines between the City and Hammersmith may appear unnecessary, especially as the District Railway Company propose to substitute electricity for steam. Short railways like those between the Angel at Islington and the Euston Terminus, or between the Paddington Terminus and the Marble Arch, may also appear not to be worth the expense of a contest. When it is considered how short a distance separates the District Railway from Fleet Street and the Strand, the necessity of several stations between Charing Cross and Ludgate Circus may not be manifest, especially to the provincial members of a Parliamentary committee, to whom two or three minutes' walk is not a serious undertaking.

For many reasons we consider a Royal Commission to consider the subject is now necessary. What is the use of creating thoroughfares at a large outlay if beneath them or alongside them are lines by which people can be spared the trouble of walking and lose little time for an almost normal charge? Several of the projected lines run beneath or near the courses taken by omnibuses, or, in other words, propose to supersede some of the principal streets, as means of communication for many people. London has inhabitants enough to adapt all modes of transport that are offered to them as well as the use of their legs. But it becomes a serious question whether streets should continue to be constructed for the sole use of pedestrians and of carts and other vehicles drawn by horses. Under the new conditions of traffic there will be rush beneath the streets from one point to another and back again. There will consequently be little to see from front windows, and perhaps the time is not far distant when the Pompeian system will be adopted, and blank walls of houses will alone engage the attention of the "man in the street" in some of the existing thoroughfares.

There is another subject which, before any more railways are commenced, should be closely investigated by some body or commission of a different constitution to the ordinary Parliamentary committee. We refer to the reports of vibrations and settlements which are current on some of the districts traversed by the Central London Railway. It is easy for occupiers and owners of houses to exaggerate their grievances, especially when they have received no compensation from a railway company, and know that enormous sums had to be paid to secure ground for the District Railway. But while making allowance on that account, it appears to be undisputed that damage to property near the "tube" has arisen. The experiment of constructing such a railway was novel in London, and it is possible that all the contingencies were not allowed for. The evil may not be reparable in Notting Hill and Bayswater, but after inquiry it might be discovered that by a slight change in the mode of construction or fixing of the iron tubes the risks of injury to house property would be removed. There is much variety in the beds on which London stands, so much that while the contractor for one section of the Metropolitan Railway was able to sell every cartload of material which he had excavated, in the adjoining section it was difficult to dispose of the stuff. That variety is rarely considered in an inquiry before a committee, but it may have much to do with the reports of vibration on the new line which are now circulated.

OLD COTTAGES.*

There are so many varieties of cottages in England, it is not surprising why they should sometimes be described as the most delightful of habitations, and sometimes as pestilential enclosures which are not fitted to shelter quadrupeds. We suppose that during many centuries actual examples could be pointed out which would justify both judgments. There is, however, another reason to explain why men take such opposite views. In other countries, as Washington Irving long ago pointed out, "elegant and intelligent society" is only to be found in the large cities, while the country is inhabited by boorish peasantry. In England, on the contrary, there is an innate rural feeling, and the cottager is, or rather was, perhaps, accepted as pre-eminently the representative of it. As Irving said, "If ever Love, as poets sing, delights to visit a cottage, it must be the cottage of an English peasant." It has consequently followed that imagination and associations have combined to elevate the English cottage into the ideal residence, one of a class which Mrs. Hemans has described in words that have not lost their charm from being printed in school-books:—

The cottage homes of England!
  By thousands on her plains,
They are smiling o'er the silvery brooks,
  And round the hamlet-fanes.
Through glowing orchards forth they peep,
  Each from its nook of leaves,
And fearless there the lowly sleep
  As the birds beneath the eaves.

It would be cruel to apply a sanitary surveyor's standard of criticism to the lines. The poetess, as a matron, may have known of the defects which made the cottage risky as a dwelling, but she gracefully conceals them by vegetation. Mrs. Allingham in a later time has adopted a similar way to make the subjects of her drawings delightful, even to those who are above romance and are rigorous for the sway of sanitation.

The conflict between reason and imagination, when cottages are judged by susceptible minds, is exemplified in the case of Thomas de Quincey. Among all his famous contemporaries there was not one who was stronger in logic, but, as is evident from his "Confessions," his visionary power was also remarkable. Out of his admiration of Coleridge and Wordsworth, he wished to be near them, and he became a resident in Grasmere. He took a seven years' lease of a cottage which Wordsworth occupied in the happiest period of his life. The great poet was easily satisfied with a house so long as it was near his beloved mountains. De Quincey was, however, an analyst, and he endeavoured to explain how and why the cottage which he retained for twenty-seven years was pleasing to him. He admits "it was, in its exterior, not so much a picturesque cottage—for its outline and proportions, its windows and its chimneys, were not sufficiently marked and effective for the picturesque—as it was lovely; one gable end was most gorgeously apparelled in ivy, and so far picturesque." It will be observed that De Quincey is careful to suggest that nature by itself cannot transform an ill-formed house into one which is beautiful. Ivy, jessamine, honeysuckle, and especially roses, were delightful to look on in any place, but they were also advantageous about the Grasmere cottage, for they broke "the unpleasant glare that would else have wounded the eye from the whitewash." De Quincey considered the Westmoreland cottages were deservedly celebrated for their picturesqueness, but the credit, he considered, should be given without deduction to the builders, for the houses produced effect "by their general outline, by the sheltered porches of their entrances, by their exquisite chimneys, by their rustic windows, and by the distribution of the parts." Accidental effects did not count for much with him; the picturesque was to De Quincey the characteresque, and therefore was more attainable by careful planning, inspired by a definite idea, than by any happy-go-lucky combination.

With all his imaginative power, De Quincey did not consider that picturesque effects were to be gained by seeking after them alone. The only Westmoreland dwellings which he considered to be worthy of admiration were those erected by native dalesmen. Modern intruders who erected what they thought were superior houses generally failed, for "these being designed to exhibit 'a taste,' and an eye for the picturesque, are pretty often mere models of deformity, as vulgar and as silly as it is well possible for any object to be in a case where, after all, the workman and obedience to custom, and the necessities of the ground, &c., will often step in to compel the architects into common sense and propriety." Wordsworth differed from his disciple, for he believed the dalesmen were in search of beautiful forms when building their houses, and were conscious of their success. But De Quincey continued to believe that a perfect adaptation to circumstances had more to do with the picturesqueness of the Westmoreland cottages than any desire for prettiness. The porch was dictated by the necessity of protecting the door against sudden rushes of wind through the mountain ghylls or ravines, and in some cases it was erected from the hospitable desire to provide a sheltered seat for a wayfarer; the outhouses were large from pastoral necessities, while the high chimneys, if not caused by the task of training the smoke into obedience under difficult conditions, were survivals of the Elizabethan forms which were retained in the vales of Westmoreland in spite of the changes of fashion. De Quincey could not claim to have his own cottage ranked amongst those which gave interest to Westmoreland. Its charm was founded on what he, logician like, called "separable accidents"—the bowery roses and jessamine and its association with Wordsworth which imparted to it historic dignity. We need not, however, trouble ourselves about the intentions of a designer; so long as he has attained beauty we should be satisfied, and it would be fortunate if all buildings could be considered as picturesque as the old Westmoreland cottages.

In the same year when De Quincey quitted his cottage at Grasmere a young student at Oxford, under the nom-de-plume "Kata Phusin," took up the subject of cottages in Loudon's *Architectural Magazine*. The editor had gained a reputation mainly as a landscape-gardener, and from the building of lodges and other cottages he advanced to discussions on architecture in general. John Ruskin, as a lover of nature, had sent one or two articles to a magazine which was devoted to natural history, and conducted by Loudon, and he also turned to architecture. Ruskin admired the English cottage, but for reasons very different to those which moved De Quincey. Why it pleased him was described in words which must now appear cold and tame to all who have read his books on mountain scenery, Venice, and Italian art. "The principal thing worthy of observation in the lowland cottage of England," says the Ruskin of 1836, "is its finished neatness. The thatch is firmly pegged down, and mathematically levelled at the edges; and though the martin is permitted to attach his humble domicile in undisturbed security to the eaves, he may be considered as enhancing the effect of the cottage by increasing its usefulness and making it contribute to the comfort of more beings than one. The whitewash is stainless, and its rough surface catches a side light as brightly as a front one; the luxuriant rose is trained gracefully over the window; and the gleaming lattice, divided not into heavy squares, but into small pointed diamonds, is thrown half-open, as is just discovered by its glance among the green leaves of the sweet-brier, to admit the breeze that, as it passes over the flowers, becomes full of their fragrance."

Ruskin was an embryo philosopher, and he tried to trace a connection between the cottages and the people who had erected them. Nothing in England was, he said, allowed to remain when it grew old; the old trees were pulled down for timber, the old houses for their materials. The cottage consequently could not be allowed to have a dilapidated look about it, and it was never suffered to get old. Ruskin subsequently held different views about the character of the English cottage, and he admired it for other reasons than its neatness and its newness, despite its age. But neither De Quincey nor Ruskin were able to prevail against popular sentiment. The ordinary, or rather the emotional, Englishman and Englishwoman accepted the country cottage whenever they found it placed in a pleasing position and surrounded with flowers and other vegetation. The love of antiquity, which was fostered by several causes, was not without its effect on humble cottages, and therefore when travelling by railway we can still see old examples, which serve no utilitarian end, allowed to occupy ground which might be disposed of in a profitable way. Coming to our own times, the revival of old English houses in a form adapted to modern requirements has caused still more respect to be given to the lowly cottage, and in most parts of England examples are to be found which should be considered valuable as specimens of ancient architecture of a simple class, and as suggestive proof of the condition of the peasantry whenever they were erected.

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* *Old Cottages and Farmhouses in Kent and Sussex.* Illustrated in one hundred plates printed in collotype from a special series of photographs taken by W. Galsworthy Davie, with some descriptive notes and sketches by E. Guy Dawber, architect. London: B. T. Batsford.

The counties of Kent and Sussex, from their vicinity to London, form an admired region, and the old cottages near the roads have, since cycling commenced, secured an abundance of praise. A hundred of the examples, selected with judgment from the most interesting among them, have been photographed and united in a book which becomes one of the most appropriate gifts which an architect could give or receive in the Christmas or other festive season. All the cottages are still in a condition which allows them to be occupied. The photographs were taken by Mr. Galsworthy Davie, the author of "Architectural Studies in France," and other works which were of use in the days when Gothic prevailed. At the instance of Mr. Guy Dawber, who has added an introduction, the collection has been made into a volume which in attractiveness it would be difficult to surpass. Every cottage has interest through its picturesqueness, and the variety of them is remarkable. There are not two which could be considered as having been erected from the same plans, and on this account as well as others they are differentiated from the modern cottages which in some districts displease the eye by their similarity. Mr. Guy Dawber has taken much care with his introduction, which forms within its limits a treatise on one class of English domestic architecture. The volume closes with an appeal which it is to be hoped will command the attention of property-owners not only in Kent and Sussex, but wherever an example of the old peasants' houses survives. Mr. Guy Dawber writes :—

> Is it out of place to raise a plea on behalf of these eloquent though silent witnesses to the craftsmanship of our village ancestors, and to urge that those who have the care or reparation of old cottages and farmhouses should treat them with a gentle hand and tender regard? Unfortunately, many are being swept away, and the dwellings of our forefathers, so closely interwoven with the life and history of our country and possessing such an intensely human interest, are being rapidly destroyed, in many cases to make way for what can only be regarded as but doubtful improvements. Go where we will amongst these old villages and country towns, and contemplate any old building untouched by the hand of the "restorer," and it is impossible not to be impressed by its beauty and subtle charm: the mullioned windows and latticed frames, the tiled roofs a kaleidoscope of varied colours, the venerable walls covered with lichens, the absence of any meretricious or needless ornament and the wonderful feeling of homeliness that pervades every feature, all combine to produce the very essence of simple and beautiful architecture.

ENGLISH CHURCH ARCHITECTURE.

THE subject selected by the Rev. Walter Marshall for consideration and illustration, according to the *West Sussex County Times*, in his last lecture at Horsham, was "Niches." He said the term "niche" included a great deal more in this case than in its common acceptation Often in these niches all that originally projected beyond the wall had been cut away, and from almost all the figures were gone. In 1547 the Privy Council made an order concerning the taking down of images, and those which escaped were cleared off by a Parliamentary enactment in 1641. In carrying this out a fee of 6*s.* 8*d.* was allowed for each church visited, and very thoroughly the work would seem to have been done. One man records that he himself smashed and pulled down 200 of such images out of 600 for whose demolition he makes claim, "which, at least," he says, "we gave orders to take down" The lecturer bade his hearers take note of these words, because within them lay the secret of the escape of some of these condemned images. They were "taken down" and hidden but not destroyed. In one case they were not even taken down, but built up in the buttresses where they stood, only to be found in 1870 during the course of restoration. The piscina or lavatory was an opening of niche-like form, placed at the east end of the church and having a drain to carry away the water. It was used for rinsing the holy vessels, and afterwards the priest washed his hands in it. In a few cases no piscina was placed by the high altar, the ablution in these cases being made in basins which were carried and emptied at one located by one of the side altars. In Norman times the piscina was single and had but one drain, but as ritual developed the chalice was rinsed in one and a separate one placed for the washing of the celebrant's hands, and in 1300 we find the piscina with two drains. At a church in Northamptonshire, there was one with three drains. In the fourteenth century again one was the usual number of drains. Often a credence shelf was to be found attached, which must not be confused with the credence tables, which were not used until 1700. Just west of the piscina was placed the sedilia of seats for the clergy, varying in number from one to five. Early in the fifteenth century all were placed on the same level. Norman sedilia were rare, although a fine example from St. Mary's, Leicester, was shown. Holy water stacks or stoups had no drain and were most often placed outside the church. The custom of aspersion probably originated in the ancient usage of washing before prayer. Movable vessels of lead were we know used for this purpose, although no examples remained of these. Fresh water was placed in these stoups every Sunday, and it was consecrated very early by the priest. Many Sanctus bell-cots were dated between 1240 and 1281, and from them a bell was rung at certain points in the service, notice for which was given by the ringing of a smaller bell within the church There was, too, the tintinnabulant bell carried before the sacrament when being taken to the sick. There were very few bells found hung on the east side of the south end of the screen In 1549 the ringing of bells during service was forbidden, but their use was reinstituted by Queen Mary. Exterior bellcots were placed at the east end of the nave, sometimes at the east end of the chancel, though less frequently there. Squints or oblique openings by the chancel arch looked always towards the high altar. They might have been used for confession, but there was no evidence to prove this. It was likely that they were employed as a mode of remedying the narrowness of the chancel arch which obstructed the congregation's view of the high altar Ornamented squints were not often seen. At St. Mary's, Bridgwater, was a remarkable arrangement of a squint from the chamber over the porch, from which, before it was blocked up, a direct view of the altar was obtainable. What were known as low-side openings were a puzzle There was one at Guildford. They were always below the range of other windows and very near the ground. Probably they were originally not glazed. There were three classes: the elongated window, the elongated light and the detached, generally rectangular. Examples of all were given and explained. They seldom showed tracery and were rarely found before 1300. Various names had been given them and purposes ascribed. They were called confessional windows, leper windows and low-side openings. They certainly were not all made for the same purpose, and there were a dozen or so theories regarding them. The leper one was that they were made because leperous persons were not admitted within the church. But special chapels were provided in the lazar houses. The confessional theory was almost as popular; "but kneeling on the grass, which must have been often very damp," bordered on the ridiculous. In old manuscripts the penitent was represented as kneeling before the priest in the open church, and it must be borne in mind that the box-like continental confessional was never used in the English Church. There was the symbolical theory which said that they represented the wounds of Christ. They were, however, in the chancel, and the chancel represented the head of Christ and the nave His body. How came these openings then not in the body? Some of these openings had gratings and shutters, and it was said that when the shutter was removed the sanctus bell was rung through them. It could be done without much difficulty. If this was their purpose why were they not placed at the east end rather than at the west? There was the anchorite theory. Frequently, but not always, it was a priest who vowed to live at a church. Not always was this to be actually beneath the church's roof If not so though a chapel was provided. He could speak to those coming through the grated windows, and it was argued that these church openings were for this. One proof that some person used of old to sleep within the church was found in that church doors were made, in some cases, to fasten in a manner only feasible from the inside. Near the altar, on the south side, were niches for the sacred vessels, which originally and for safety had doors. An example of the late thirteenth or early fourteenth century from Chester Cathedral was shown. Often there were shelves within these recesses. Sometimes these were of stone, less usually of wood Lockers there were, in connection with fonts, in which was kept the sacred oil and other things connected with the rite of baptism as then performed. There were two kinds of Easter sepultures, a permanent structure, always in the north wall at the east end of the church, and a portable wooden one. Of the latter none were now in existence. The Easter Sepulture took place mostly on an altar tomb which had been specially dedicated, by will or otherwise, to this purpose. Three hosts were consecrated on Maundy Thursday, and placed here with the cross, one of which was used on Good Friday, on which day no consecration was allowed to take place.

The lecturer said it was always matter of regret when autumn and winter restricted the direct study of architecture during these courses. However, if any wished it, he was prepared to come in the summer and keep up what they had learned by visiting with them any churches of interest in the neighbourhood.

The Rev. A. F. Young moved a vote of thanks to Mr. Marshall. They had all learned a great deal, and must feel devoutly thankful that so much was still left by the Reformers and the equally rude hand of the restorers.

At the evening lecture Mr. Marshall said that, in order to have a sympathetic conception of the Perpendicular, it was necessary to clear away much undergrowth. In the early years of the present century the Perpendicular style got a bad name: it was too horizontal, it was too perpendicular. Pugin, Fergusson and Freeman were notable exceptions in their abstention from this abuse. Text-books were very general in their depreciation of this style; but art principles were identical throughout many styles. We had Englishmen working for Englishmen in English ways. To despise the flower was to despise the whole plant, root and branch. We did not need to be made more critical, but more sympathetic. From 1350 to well on to 1600 the style got thoroughly ingrained into the English mind. There was national character expressed in the Perpendicular. At one time England, France and Germany were architecturally in touch; gradually a breach appeared and widened, and they drew away from each other, each becoming more nationally characteristic. France passed to the Flamboyant style as England developed the Perpendicular. The English love of detail and harmony came out clearly in our mouldings. Design to please must be governed by proportion. The Perpendicular excelled in its distribution of lines and masses. The Lancet period was the period of mouldings. In the Perpendicular we found constructive ingenuity at its zenith. Fan vaulting could be perfectly built if ribs were but painted upon it. Three modes of working out fan vaulting were shown, both in diagram and actual result photographed. There was a gradual development from the Decorated to the Perpendicular. Extreme elegance in tracery had begun to cloy, and this perhaps led to too great severity. As the art of glass staining advanced, figures were introduced more largely and spaces for their reception influenced window tracery. Space was needed amongst the upper tracery as well as in the lower portions of the window. The woodwork of this period was truly magnificent. It formed the harvest time of all previous work. In many instances clerestories were added in this style to churches of older design which had previously been without them. Buttresses were generally plain and worked in stages. Doors were various, mostly having square headings. More porches were built in this than in any style. Angels appeared on mouldings and the Tudor flower was frequent, while the vine was carved in profusion, and in Devonshire these mouldings and woodwork generally assumed a very distinctive character.

LANCASTER CASTLE.

THE circumstantial announcement made quite recently that Lancaster Castle is in danger of being sold by public auction or otherwise disposed of must have come as a shock to all loyal Lancastrians. That John of Gaunt's famous castle, the glory of the little town on the banks of the Lune, should in its honoured old age be "brought to the hammer" is (says the *Manchester Guardian*) a possibility too bad to contemplate. It is satisfactory, therefore, to find that popular rumour, as usual, has greatly exaggerated the true state of affairs. The only danger which threatens Lancaster Castle is apparently that the portion of the building which is now used for prison purposes may shortly be closed, for the very satisfactory reason mainly that the kind of accommodation which it provides is in these days no longer required. It is a mere platitude, of course, to say that it is useless to provide and maintain a prison when there are no prisoners to tenant it. That this ideal state of things exists at Lancaster not even the Prison Commissioners would venture to assert, but it does seem to have occurred to these gentlemen that it is equally foolish to keep up four prisons in a district where three are more than sufficient. Hence the proposal to cease drafting offenders into Lancaster and to distribute them in other directions. It is not at all certain as yet whether the Commissioners will succeed in their object, but even should they do so the glory of the castle will be in no wise diminished. The only difference will be that the cells in the prison will be no longer tenanted, and that the control of that portion of the building may possibly pass from the Prison Commissioners back into the hands of the county magistrates or their administrative successors, the County Council. This present suggestion of the Prison Commissioners would appear, after all, to be only an old scheme revived. Some years ago a similar proposal was put forward, but so strong was the opposition that it was speedily abandoned. Perhaps it would be unfair to suggest that Lancaster people are proud of the fact that their fine old castle has for centuries past been the abode of malefactors. But it is, at any rate, undoubted that they manifest a certain grim interest in the terrible accusations which cluster around the "droproom," the debtors' prison, and the dungeons under the Adrian Tower. Is there not also to be quoted the significant order of Elizabeth for the restoration of the castle at the time of the Armada—"That this castle be mayntayned and kepte, because it is a great strength to the countrie and succourer to the Queen's Justices"? At any rate, the indignation aroused by the proposals of the Prison Commissioners was deep and widespread. Sentiment, no doubt, had much to do with the strength of the opposition, but it is not unlikely that there was also in the background a fear lest this should prove the "thin end of the wedge," and should be followed by the withdrawal from Lancaster of the assizes, which have been held in the county town for some 600 years. The contest successfully waged upon that occasion must now, one fears, be fought over again. The Prison Commissioners have recently submitted to the magistrates of the various petty sessional divisions which have Lancaster as their natural centre, a formal scheme of rearrangement. Their plan is that in the future offenders from Barrow, Ulverston and Dalton shall, on being sentenced, go to Kendal Castle, those from Lancaster to Preston Gaol, and those from Settle, Bentham and Ingleton to one of the West Riding prisons. The Prison Commissioners know little or nothing of sentiment; their duty is to see that adequate gaol accommodation is provided, and their sole argument in the present case is based upon "convenience." But the magistrates concerned have replied that they consider that the new arrangement would be not only very inconvenient, but also unnecessarily expensive. They have, therefore, with unanimity adopted resolutions protesting against the change, and these have been forwarded to the Home Secretary, upon whom much pressure is being brought to bear in antagonism to the scheme. It appears that Lord Cross, Sir J. T. Hibbert and Mr. Victor Cavendish, M.P., are actively interesting themselves in the matter, and there is every prospect, so one is assured, that this latest attempt to detract from the importance of the county town will eventually come to nought. Above all, however, it is absolutely certain that Lancaster Castle, with its priceless memorials of the past and a history that goes back further than the Conquest, will never suffer the indignity of "coming into the market."

THE CHESTER "ROWS" IN LONDON.

THE following communication from Sir Frederick Bramwell appeared in the *Times* of Monday:—

I have refrained from writing to you with respect to my proposition of applying the principle of construction of the Chester "Rows" to the houses of the new street from north to south until now, because I wished to see what objections might be raised to my proposition.

I believe I may now take it that these objections—or, at all events, the bulk of them—have been made, and that therefore the time has come when I may ask you to grant me space for another letter.

One of the earliest letters to deal with my proposition was that of Mr. Frederick Harrison, who was chairman of the improvements committee of the London County Council in 1892. He says:—

"The difficulty that I wish to suggest to Sir Frederick Bramwell is this. The Council cannot build, and never contemplated any building of its own, on the immense area of the new street. It would only sell or lease sites. But how can it impose on purchasers and lessees the novel, untried, intricate experiment of compelling them to build double footways and double shop fronts? To impose such a task on all intending builders alike, and all must be compelled to adopt it, would fatally hamper the disposal of the land."

I am very glad to see that Mr. Harrison disclaims all intention on behalf of the County Council of their becoming speculative builders; but I cannot at all agree with him that the imposing the condition of the upper shop on intending purchasers or lessees would fatally hamper the disposal of the land.

I do not think that any one has denied that the provision of the upper shop would add to the rental value per length of frontage. There can be no doubt it would largely add to that value. If so, how would it become a deterrent to a lessee?

There is a seeming objection which Mr. Harrison appears to have overlooked, and that is that the letting of the various plots might be made at different dates, and that thus a man who took an early lease of plot "D" might find himself cut off from communication with other plots by reason of plot "C" and plot "E" not being leased until, say, a year later.

This difficulty, which I fully recognise, I should propose to get over by calling upon the County Council to provide—within a year (or some other term) after the letting of the first plot—a temporary footway at the upper level. In these days of steel girders this could be done at a very inconsiderable cost compared with the value of the land, and might properly be made a charge upon the leaseholder of the plot where this temporary structure had been necessary, but should not fall upon any person who had completed the upper footway by the "blank of blank, 19—."

With the width of 15 feet which I have suggested for the footway, there would be no difficulty whatever in replacing the temporary by the permanent, half the width at a time.

Mr. Harrison and others appear to imagine that I did not intend to carry the superstructure upon pillars. I always did so intend. I consider them essential to the picturesque architecture to which, as I said, this construction lends itself. I did not show them on the "primitive sketch" which I sent to you, as I feared your readers would not understand, and would fancy they represented some extra wall. For the same reason I cut out the bridges across the main street and found it safer to write "bridges at intervals," seeing that the sketch which I had prepared looked very much like a sort of above-ground tunnel.

I find that these bridges over the main street are objected to by some. My answer is, they are no necessary part of my scheme, they are simply possibilities arising out of it. The bridges over the side streets are, of course, necessary parts of the scheme.

In my further letter to you, published in your issue of November 15, I pointed out I never intended that there should be a staircase from the lower to the upper level at every house, and I suggested that one at every 100 yards would be ample. From the small scale map which I have I gather that the straight part of the street will be 550 yards long, and that the mean of the two curved wings (for they differ) will be, say, 190 yards long, together, say, 740 yards, involving, say, nine staircases, on each side of the street.

I find that some who have written approving generally of the scheme base their principal objection on the unsatisfactory condition in which these stairs might be kept.

Assuming the mode of construction to be otherwise desirable, it seems to me idle to reject it on the ground that a public body could not cleanse daily a few stone staircases. I should say a hose, a man and a broom ought certainly to do all that was needed in the worst weather in a quarter of an hour for each staircase. As I have pointed out, these stairs would derive road mud from one end only.

I think it extremely likely that in many instances the owner of the ground-floor shop would also be the owner of the upper shop. In this case, no doubt, he would have his own internal communication—staircase or lift—between the two, available to customers

Presumably many of the houses would be designed for occupation in flats. In all such houses there would be lifts. I do not think it is too much to suggest that at each end of the street, and on both sides of it, a lift might be provided to convey persons from the lower to the upper level—free of charge. This would be no innovation as far as principle is concerned, as for some time past there has been free conveyance by ferry at Woolwich.

As regards the objection that has been raised on the subject of police supervision and a reference to the former Regent Street "Quadrant."

In these days of arc lamps this is a very different matter from what it was in the days of the Quadrant, and I should imagine that a man on "point duty" would be very advantageously placed on the upper footway, where he would command both the upper and the lower pavement.

I find that about 17½ feet would be a height sufficient for the upper footway above the lower pavement. The cross bridges would, of course, have their footway level with the bottom edges of their girders, and these bridges being raised, say, two steps at each end would give a headway of 18½ feet, equal to that of the east side of the railway bridge over Ludgate Hill

One or two writers have expressed fears as to whether there would be a sufficiency of light in the upper shops, and have cited the case of the old Quadrant in support of their fears.

The answer is that the projection of the Quadrant roof was much more than the projection of the second storey beyond the first floor in my proposition. Further, that being higher up—namely, on the first floor instead of on the ground—there will be a better angle of light; and, best of all, that there is found sufficient light in Chester, where the "Rows" are only about two-thirds of the height, I should say, that the first-floor shops would be in the new street.

My proposition has given rise to so much correspondence that I can by no means be certain that I have read the whole of it; but, so far as I have seen it, I believe I have dealt with all the objections of importance.

I do not lay claim to any invention in my proposition. I simply, by your favour, have been able to bring before the public the opinion I have for so many years expressed privately—that the principle of the Chester "Rows" could be beneficially applied, both in financial and in architectural interests, to any considerable length of new street.

I have no hope that it will be carried out, as, notwithstanding the many years it has beneficially prevailed at Chester, Mr. Harrison fears it as a novelty, and therefore rejects it.

I do not see any way by which I could further advocate this mode of construction short of inducing some architect of position to associate himself with me in the preparation of an artistic design—of which I do not profess myself to be capable (although I would answer for stability)—with the hope that such a design might find its place among the architectural drawings in the Academy next May. But to do this would involve my devoting a more considerable portion of my time to the matter than I can afford.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.

THE forty-second annual general meeting of this Society was held on the 29th ult. at 9 Conduit Street, W., Dr. J. S. Phené, chairman of the council, presiding. Mr. P. H. Newman, hon. secretary and treasurer, presented the annual report, which stated that many highly instructive lectures had been given during the past year, and that want of adequate funds hampered, to some extent, the work of the Society. The main object of the organisation was to establish agreeable reunion between the artist and the amateur, whereby their mutual interests might be made known and cared for. He outlined the programme for the coming session, and mentioned, amongst other matters, that the annual dinner of the Society would be held, as usual, on the Queen's birthday. The Chairman spoke of the advantages of the Society, and said it had for many years promoted the cause of art. He mentioned that, consequent upon the loyalty and enthusiasm displayed at the last annual dinner, he had written a poem, a copy of which he had sent to the Queen, who had replied, through Sir Arthur Bigge, graciously accepting it A hope was expressed that the office of president, which had remained vacant since the death of its former occupant, the Earl of Lathom, would shortly be filled. The following gentlemen were elected vice-presidents:—Mr. Charles Keyser, Mr. Alfred Gilbert, Mr. G. C. Haité and Dr. Phené. The retiring members of the council were re-elected, as was also Mr. Newman, who was accorded a vote of thanks for his services.

DESTRUCTION OF ANCIENT BUILDINGS IN THE LEVANT.

A CORRESPONDENT of the *Times*, who writes from Jerusalem, November 15, complains of the wholesale destruction of historical monuments which is permitted by the Turkish Government. He says:—"The following may serve as examples. Two years ago a singularly interesting historical treasure was found in Jerusalem, the Cufic inscription at the entrance of the small mosque of Omar, once standing within the arcaded porch of Constantine's Basilica of the Holy Sepulchre, and dating from the seventh century. It was cut on a stone of the original Roman building, and therefore *in situ*. On being found it was voted a mystery, because the small mosque of Omar was rebuilt on a quite different site after the crusades, and this fact is unknown to modern natives of Jerusalem. However, to please various parties the old stone was torn from its position, and the inscription was sawn off and sent to Constantinople for better investigation. Its present fate is unknown. The interesting and well-preserved church of St. Jeremiah of the thirteenth century at Abu Gosh, near Jerusalem, has been presented to the French Government, and a proposed 'restoration' is now on foot. An article in the *Rassegna Nazionale* of Florence last August gives an account of how it is to be rebuilt in the interests of Catholicism as opposed to the Orthodox Church, but no mention is made of the archæological interest which will be completely destroyed by such a 'restoration.' To-day, a friend, returning from a ride on the other side of Jordan, has given me a deplorable account of what is happening to the hitherto marvellously preserved cities of the Decapolis. The colonists recently planted in that region have selected the most famous cities for the purpose of turning them into stone quarries. Gerash (Gerasa) is filled with a Mohammedan colony, which is provided with carts (a very modern innovation in the Levant), and the work of destruction is proceeding in a methodical manner. The famous 'street of columns' is disappearing before the picks of the settlers, and the columns are being broken up for building material. The curious circular colonnade at one end of the city is not yet touched. At Amman many of the well-preserved Roman monuments have disappeared during the past year. The great theatre is now nearly gone, and the carved stonework of the temples and other public buildings is being treated in the style of the unfortunate remains at Famagusta, to which I referred on a former occasion; it is being defaced, or rather 'refaced,' with new dressing before being reused to build the squalid huts of modern days Cæsarea and Sebaste are examples of what has been done during the past ten years in the way of destruction, perhaps better known to your readers, but the same system is now being carried out on a truly colossal scale all round the Levant It would be difficult to enumerate the cities, towns, castles and isolated monuments which are vanishing with the nineteenth century."

GLASGOW INSTITUTE OF ARCHITECTS.

A GENERAL meeting of this Institute was held on the 29th ult in the rooms, Pitt Street, Mr. John James Burnet, president, in the chair. Among those present were Messrs Thomson, Lindsay, Monro, M'Gibbon, Wilson, Barclay and Paterson, with Mr C. J. MacLean, writer, secretary. The Secretary reported the action taken by the Council regarding the Woodside district halls competition, and that they had informed the Corporation that considerable hardship would be inflicted on the competitors if the scheme on which they had spent their labour on the understanding that the building was to be erected in accordance with the published conditions should now be altogether set aside, and also that in their opinion the competitor whose design in the first competition had been recommended for adoption by the assessors should be employed to design the combined public hall and library. The President thanked the Institute for having elected him for a second term of office, and while regretting that they had not secured the services of an older member, and one who was better known to their brethren of the Royal Institute, he assured them that with their indulgence he would do his best to fulfil the duties of the office, however arduous they may be, during the coming Exhibition year.

SOCIETY OF ANTIQUARIES OF SCOTLAND.

THE annual general meeting of this Society, for the election of office-bearers and other business, was held in the National Museum of Antiquities, Queen Street, Edinburgh, on the 30th ult., Sir James Balfour Paul in the chair. The following is the list of the Council for the ensuing year:—President, the Right Hon Sir Herbert E. Maxwell, Bart., M.P.; vice-presidents, the Hon. Hew Hamilton Dalrymple, Sir Thomas Gibson Carmichael, Bart., and David Murray, LL.D; councillors, Sir George Reid, P.R S A, and Sir Arthur Mitchell, K.C B; representing the Board of Trustees, Sir James Balfour Paul, John Findlay, Robert Munro, M D., W. Rae Macdonald, Sir Kenneth Mackenzie, Bart., Colonel A. B. M'Hardy, C.B, and James Macdonald, W S.; secretaries, David Christison, M. David, J H. Cunningham, C E; foreign secretaries, Thomas G. Law, LL D., and the Hon John Abercromby; treasurer, John Notman; curators of the Museum, Professor Duns, D.D., and Alex. J. S. Brook; curator of coins, Adam B. Richardson; librarian, James Curle, jun. Six honorary fellows, recommended by the Council, and ten new fellows were elected, and the election of Miss M A. Murray and Mrs. E. S Armitage as lady associates was announced. Mr. J. H. Cunningham, secretary, presented a report of the work of the Society during the past session. Twenty-three papers of archæological, historical, and genealogical interest had been read at their meetings, and printed with suitable illustrations in the volume of the Proceedings, which would shortly be issued to the fellows, and considerable progress had been made with the work on the early Christian monuments of Scotland by Mr. J. Romilly Allen, and with the illustrated catalogue of Scottish coins, in preparation by Mr A. B Richardson, the curator of coins, which the Society expected to issue in the course of the ensuing session. During the past season a series of excavations of the small earthworks along the Roman road between Ardoch and Dupplin Loch had been conducted as a sequel to the more important excavation of Ardoch itself, and a much more important excavation of the Roman camp at Lyne, in Peeblesshire, had also been almost completed, and these would be described in the course of the session. Mr. Coles had again been appointed to the Gunning Fellowship to continue the survey of the stone circles of the north-east of Scotland Last year he surveyed about twenty circles in the Deeside district, and this year about twenty more in the Inverury district, a description of which, with measured plans and drawings, will be communicated to the Society. During the year there had been nearly 600 objects of antiquity added to the museum by donation and about 400 by purchase, while the number of books added to the library had been 296 by donation and 18 by purchase. Among the more important of these additions were a collection of objects of the Romano-British period obtained during the excavation by the Society of the Roman site of Camelon, near Falkirk, presented by Mr. Forbes, of Callendar; a collection of stone weapons and other objects from the Admiralty Islands, presented by Mr John Young Buchanan; a collection of rude flint implements from Egypt and Somaliland, presented by Mr. H. W. Seton-Karr; and a bequest of a collection of Bibles printed in English from 1537, numbering 130 volumes, by the late Mr. John Haxton, Markinch; and 24 volumes of the Publications of the British Museum, presented by the trustees. The Society's losses in membership by deaths and other causes had this year been heavy, and it was of the utmost importance that the Society should be well represented throughout the country, so as to receive timely notice from its friends and members of discoveries that were made from time to time, so that they might be properly investigated and recorded for the benefit of science.

EDINBURGH ARCHITECTURAL ASSOCIATION.

THE inaugural meeting for this session was held on the 28th ult. in the Royal Institution. The president, Mr. Henry F. Kerr, in suitable words thanked the members for the honour they had conferred upon him in electing him to the chair He then proceeded to give the opening address, which took the form of a paper describing "A Visit to Melrose Abbey." The subject was copiously illustrated by limelight views. Mr. Kerr sketched in outline the history of this famous abbey, from its foundation by David I. in 1136, when a colony of Cistercian monks (only lately settled in England) were established on the silver banks of the Tweed from Rievaulx, in Yorkshire. Like all the Border abbeys and churches, its buildings suffered many devastations, most notably by Edward I., Edward II., Richard II. and the Earl of Hertford. But, though damaged and pillaged by the kings of England, it was honoured and fostered by the kings of Scotland Founded by David I., gifted with fines and forfeited lands by Robert the Bruce, and further enriched by Alexander II, it reached the zenith of its fame in the thirteenth century. Mr. Kerr then described in detail the existing remains. He indicated the probable extent of the church and the cloisters, and observed that the importance of the abbey was apparent from the great size of the latter. At Melrose the cloister was evidently 150 feet square, only that of St. Andrews being greater in Scotland, and those of Salisbury and Norwich alone being greater in England. The very excellent carving which is noticeable in the earliest work in the cloister is also to be seen throughout all the remains. Examples of these carvings were shown in detail on the screen. The interesting ritual choir, with rood-screen and great arch over it, and the fine examples of flying buttresses, were fully explained. The north transept with its early and late work, its well-known Crown of Thorns window and late clerestory, were all in turn commented on. The south transept, with its magnificent south gable with doorway and great window, its adornment with niches and buttresses, and the grouping of all the parts, next claimed attention. Mr Kerr explained the difficulties in the way of dogmatising about the dates of later work in Scotland, of which this was a brilliant example, and mentioned the various opinions that are held on this subject. The unusual features in the plan claimed some attention. For example, the cloisters being on the north side of the nave rather than as usual on the south side; the range of chapels opening off the south side of the nave; and the shortness of the choir, or eastern arm of the church, necessitating the ritual choir encroaching to the length of three bays into the nave. The last king whose name is associated with this abbey was James IV., who married Margaret Tudor. The royal arms, with the date 1505, are borne by one of the chapel buttresses, and it is said that one of the bosses in the vault of the sanctuary, or extreme eastern portion of the choir, is sculptured with the arms of his queen. The beautifully-ribbed vault of this portion of the building, the skill and originality of the tracery of its windows, culminating in the glorious eastern window of world-wide renown, were treated of in detail. In summary, Mr Kerr expressed the opinion that visits to such a building were of great moment, both to lay and professional students of architecture. The old world associations, the wondrous rise to prosperity and worldly greatness, the terrible retribution of ruin for laxity and evil—all tell their own tale. Above all, to the truly architectural student there was the thoughtful plan, the careful adjustment of parts, the bold yet skilful detail, the grasp of the capabilities of almost every phase of Gothic style, rare and unstrained originality, especially in tracery, and the whole conception adorned with carvings of remarkable grace and spirit, to educate and delight.

NOTES AND COMMENTS.

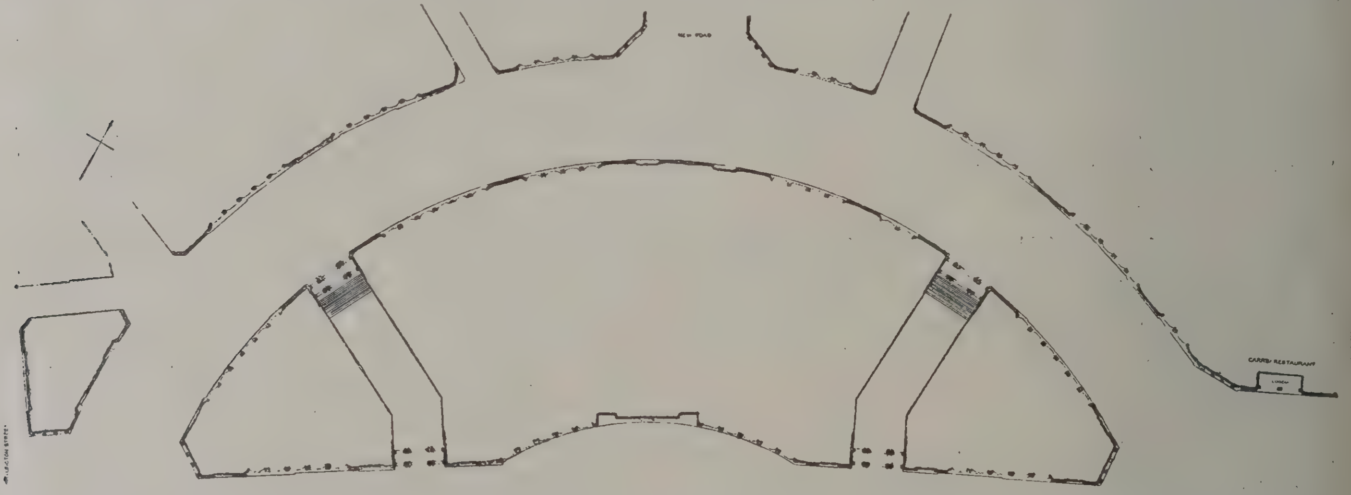
Whatever objections may be raised to the presence of European races in North Africa, there is no doubt the French officials have helped to increase our knowledge of the Roman occupation in the early part of the era. One of the latest discoveries has been a castellum at El-Hagueuf, in southern Tunis, which is so well preserved it could in the case of necessity be used for defence. It is supposed to mark the site of the ancient Tisavir, and is believed to have been erected in the second century by the centurion Sextus Uquius Paulus, who belonged to the third legion. Various objects were found there, including a bronze head representing a child laughing, which was used as a vase. In the same place numerous lance-heads and arrow-points were met with. At Sufra, between Tunis and Carthage, a Punic grave was discovered, containing a sarcophagus which is an example of brickwork arranged in diverse patterns. On the coast at Hussein-Dey was found the barrel of a cannon of wrought-iron, which must have been cast ashore during the storm of 1541 from one of the vessels belonging to Charles V. It has been sent to Paris.

The arrangements for the granting of medals in connection with the Paris Exhibition have been altered, owing to the remonstrances of exhibitors. It was proposed to make diplomas stand for the Grands Prix, gold medals, silver medals and bronze medals. Owing to the generosity with which those rewards were granted and the cost of preparing the medals, the outlay would be more onerous than could well be borne by the authorities. To meet the objections of the winners it was decided that a bronze medal, which would be designed by M. Chaplin, should be given to those who had been awarded medals in gold or silver. But as it would be difficult to have a bronze medal recognised as being of equal value with one of gold a further modification has been adopted. An exhibitor who has been awarded a gold medal can obtain one from the mint in Paris on the payment of 710 francs, and a silver medal on payment of 22 francs. In other words, all medals of a value exceeding that of a bronze medal will be evidence of the desire of exhibitors to possess what was anticipated by them when they co-operated in the Exhibition.

When George Augustus Sala visited Dublin there was nothing in the city which more amazed him than the old clothes shops in the Coombe, St. Patrick's Street and thereabouts. He had rambled through most of the alleys of the world where rejected vestures were exhibited, but it seemed to him that the neighbourhood of the Dublin Cathedral was selected as the repository for all the wrecks which were cast out of his former haunts. It used to be a common belief that a man could equip himself from tip to toe in one of those sartorial repositories for a shilling, and the difference between that sum and the value set on the clothes worn by a man represented the amount which was available for a last debauch when his money was expended. It would be impossible to say what myriads of microbes were disseminated from so terrible a quarter. The horror of it was increased by the sight of butchers' shops and provision stores being found mixed up with the old clothes. Lord Iveagh, who is resolved to transform that part of Dublin, has purchased a large part of the wretched property, containing about 5 acres, and has made it over to the Corporation for the purpose of creating a market for the sale of old clothes and other débris.

A remarkable experiment in the application of oils to roads has been described by Mr. T. F. White before the Good Roads Association of Southern California. At first it was proposed to use oil for keeping down the dust, and as a substitute for sprinkling with water, but it was afterwards discovered that by the use of oil the surface of the road became hardened and was made better adapted to sustain traffic. The oil has to be as hot as possible, and it is necessary to use from 100 to 150 barrels per mile, the width being from 16 to 18 feet. It was waste of labour and oil unless the roadway to be operated on was firm and consistent. If the road is sandy or formed of loose alluvial soil a firmer material should be laid down upon it before oil is used. At a place known as Chino, where great care was taken in the experiment, it was found that one year's traffic did not affect the oiled road. The oil was obtained from a refinery at a temperature of 250 degs. to 300 degs., and about 150 barrels were applied to a mile surface of 18 feet wide. The road is by strangers assumed to be covered with bitumen. On its first application the oil penetrates to a depth of about an inch, and uniting with the layer of gravel on top forms an elastic roadway that causes less jarring than one of stone or cement. It is only in a petroleum district that the large quantity of oil required can be obtained economically.

The French Imprimerie Nationale is to be found in the Rue Vieille du Temple. The street would not now be considered as worthy of the residence of a grandee, but the buildings utilised as printing works were erected by the Prince De Soubise in the time of Louis XIV. Cardinal De Rohan lived there, and it was the scene of some of the transactions connected with the mysterious affair of the Diamond Necklace, through which Marie Antoinette suffered much odium. The printing works were established in 1809. They are exceptionally complete, and in addition to the ordinary official documents, playing-cards, maps, &c., are produced, although generally the receipts barely amount to the expenses. It is proposed to set up new works elsewhere, and the sale of the old building will excite interest throughout Europe. At one time there was rivalry between the noblesse of Paris about the decoration of their mansions. The house erected by the Prince De Soubise was recognised as one of the costliest. It is said that the late Duke D'Aumale was willing to give about 40,000*l.* for the panelling of one room. The carving has been throughout cut in the solid, and is a memorable example of the skill of Parisian workmen.



ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: THE TRANSEPTS, LOOKING NORTH.

THE LONDON COUNTY COUNCIL HOLBORN AND STRAND IMPROVEMENT.—DESIGN NO. 21. (SEE PLAN ABOVE.)

STAINED GLASS IN ENGLAND SINCE THE GOTHIC REVIVAL.

WITH SOME ACCOUNT OF THE CHURCHES REFERRED TO.

By T. Francis Bumpus,

Author of "Ecclesiologia Germanica," "Summer Holidays among French Cathedrals," &c.

(*Continued from page* 236.)

The Works of Hardman (*continued*).

SOME of Hardman's most extensive and important contributions to the vitreous decoration of churches in the West Midland shires are to be found in Bristol—in the nave of the cathedral, rebuilt between 1867 and 1877 from the designs of Street, and in the same architect's church of All Saints, Clifton, of which the chancel was opened in 1868, and the nave four years later. Great care and trouble was bestowed upon the design of the windows in this fine example of Street's genius, the scheme having been planned by Mr. John Powell, under the supervision of its vicar, the present Dean of Chichester (Very Rev. R. W. Randall), and also with some advice and suggestions from the late Rev. James Skinner, of Newlands, whose connection, as one of the assistant clergy, with St. Barnabas, Pimlico, during the troublous times of the fifties will be recollected by those who have studied the progress of the Oxford Movement. Each design for these windows lso was submitted to the architect of All Saints and received he benefit of his criticism and experience, so that the whole, whether regarded from a moral or an artistic standpoint, orms one carefully elaborated and harmonious scheme, and a eries of windows perhaps as thoughtful and comprehensive as ny in England, while as regards richness and brilliancy of olouration, it well sustains the reputation of its executants. passing glance can, however, only be given to this unique eries of windows at All Saints, Clifton, it being necessary bring our consideration of the works of Hardman to close with the next chapter. Commencing with the first glass serted in the church, we have that filling the east window— fine Geometrical one of five lights with a large circle, whose acery is composed of a lesser circle surrounded by eight efoils, and quatrefoiled circles in the subarcuations. We find e lights occupied by a representation of Our Lord and e Blessed Virgin surrounded by saints, not only of the old d new dispensations, but of others non-scriptural, as is propriate to the dedication of the church; the whole tracery ing devoted to figures and groups especially relating to the Ministry of Angels. The two-light window on the north side of the sanctuary has the Triumphal Entry of the Ark into Jerusalem, and the High Priest within the Holy of Holies; the corresponding window on the south the Vision of St. John in Patmos and that of Ezekiel, both very appropriate iconographically. The tall, three-light windows of the nave clerestory with their varied tracery present a continuous series of subjects from the Life and Ministry of Our Lord, commencing at the north-west corner with the Baptism, and terminating at the south-east one with the Descent of the Holy Ghost. Beneath each subject is an appropriate legend in Latin, and below again two typical subjects from Old Testament history likewise legended. Thus, the central light of the third window on the south side has for its main subject the Crucifixion, beneath which is inscribed *Ubi crucifixerunt Eum*, and, paralleling it, Samson dead between Pillars and the Lifting-up of the Brazen Serpent, with the legend *Omnia traham ad Me ipsum*. The whole series may be regarded, therefore, as a great pictorial Bible, forming, as it does, an epitome of the Old and New Testaments and of the Life and Work on earth of the King of Saints, who, as just recorded, is represented in Glory in the east window. In the very narrow aisles, which instead of taking the customary lean-to form, have a quasi-transeptal character externally, each bay being gabled transversely, the fenestration is composed of coupled lancets surmounted by a circle. The former contain effigies of British saints—Holy Women finding a place in the northern, and Holy Men in the southern range; among the latter, a figure emblematic of one of the Fruits of the Spirit.

All Saints, Clifton, from the South-East.

The two west windows are devoted to the Creation and Fall of the Angels, and the Creation and the Fall of Man, and the geometrically traceried one of three lights terminating the lady chapel, whose roof is gabled parallel with that of the chancel, fifteen subjects from the Life of the Blessed Virgin, beginning, according to ancient precedent, at the left-hand bottom corner, with the Vision of St. Joachim. The corresponding chapel on the north of the chancel contains five very good windows by Clayton & Bell, the eastern one of which was the first inserted in the church, it being, in fact, in position before the consecration, June 8, 1868; but all this glass is unfortunately concealed from the rest of the building by the organ. Such is a brief account of the vitreous decoration of All Saints, Clifton, a church which has always possessed more than a local interest, for, apart from the fact that the building is a striking example of Street's original genius, that it is enriched with all the accessories of religious art, and that it is well adapted for a dignified ceremonial, there has always been stamped upon it that indefinable prestige of success which is patent to all who have paid it a visit. The main idea of the ground-plan of All Saints, Clifton, is Spanish, having been conceived by Street after a tour to which we owe that valuable and interesting contribution to ecclesiological literature, "Some Account of Gothic Architecture in Spain," now extremely scarce. The manner in which the choir and its aisles are all seen at a glance from the nave was in all probability based upon a study of Gerona Cathedral, and the nave taken from a Dominican church in Seville. To this portion of the church there are, strictly speaking, no aisles as mentioned just now, but we have between the massive buttresses, which are carried up to the whole height of the tall clerestory, a series of transversely gabled projections. Internally, these buttresses being pierced, narrow passages or ambulatories are gained, while a somewhat spectacular effect is arrived at by prolonging the voussoirs of the nave arcades so as to form a barrel vault.

The short stout columns carrying the arches are of red Mansfield stone, having bases of Pennant and sub-bases of Box stone, while in the voussoirs of the arcades and their continuation barrel-wise across the narrow passage between the buttresses a charming effect of natural polychromy is gained by the judicious admixture of blue lias with the stones used in the columns.

All Saints, Clifton: The High Altar and Reredos.

In another suburb of Bristol a very interesting memorial window by Hardman to Bishop Monk* was placed in 1857 in the tower of Stapleton Church, of which that prelate was the munificent rebuilder from the designs of Mr. John Norton. It is a three-light window. In the centre light is a representation of Our Lord in Majesty, and kneeling at the foot is the figure of the bishop in the act of humbly offering as founder a model of the restored church, St. Peter and St. Augustine, as representatives of the two sees over which the prelate presided from 1830 to 1856, occupying the side lights.

In the cathedral at Gloucester two of Hardman's largest works are the great Perpendicular windows in the transepts, and those worked out in conjunction with the late Mr. Gambier Parry (who was responsible for its colouration) in the chapel of St. Andrew, opening from the south transept of the same cathedral. In the nave at Gloucester the west window of the north aisle, illustrating the history of King Lucius, is Hardman's, and they have also restored the old glass in the window lighting the fifth bay of the same aisle—a Norman window, one of a series fitted with Perpendicular tracery, which is continued on the Norman wall under it. The glass in all this series of windows, although by different hands and desiderating that uniformity of design so requisite, is far superior to that inserted previously in the lovely range of early fourteenth-century ones in the opposite aisle, the best being perhaps the eighth, which is by Rogers, from a design by Preedy, and the fourth, sixth and seventh, each of which is due to Clayton & Bell. In 1872 some glass which Hardman had put in the central lancet of the triplet at the east end of Hereford Cathedral twenty years before was removed, and distributed in two windows of the south transept clerestory, new glass in the medallion style, showing, as might be expected, a great advance on that placed by the same artists in the double quintuplet of lancets at Worcester, being substituted. At Monkland, in the same county, where in 1865 Mr. Street had built a new chancel to that village church which he had been called upon to restore, some of Hardman's most felicitous work on a smaller scale may be seen in the east window. The design accords not only with the dedication of the church to All Saints, but with the object of the compilers of "Hymns Ancient and Modern," by whom it was given, the whole expense of rebuilding the chancel having been defrayed by the late Rev. Sir Henry Baker with money derived from the publication of that deservedly popular treasury of Church song. Further west, in the remote—and in its solitariness awful—cathedral of St. Davids, we meet with some of Hardman's work in the four small lancets at the east end of the choir. This stained glass, as well as the mosaics in the three large lancets below—worked by Salviati in the manufactory at Murano from cartoons by Powell, and forming interesting items in the vast work of restoration commenced in 1863 by Sir G. G. Scott—was the gift in 1871 of Rev. John Lucy, rector of Hampton Lucy, in Warwickshire, and partly in memory of his ancestor, William Lucy, Bishop of St. Davids, 1660-77. Crossing the Bristol Channel, we find in the church of Frome Selwood a series of windows illustrating the history of the patron—St. John the Baptist. They can hardly be pointed to as works of the highest order, although uniform in design, deriving their interest chiefly from the fact that they form part of that great scheme of restoration carried out in this—by no means typical—Somersetshire church under the regime of the late Rev. W. J. E. Bennett, who, it will be remembered, was driven from his post at St. Paul's, Knightsbridge, and St. Barnabas, Pimlico, by the unhappy events arising out of the anti-Puseyite riots of 1850-51.

Presented to the living of Frome Selwood in 1852, Mr. Bennett immediately on his arrival gave a fresh impetus to the work of restoration, at which some attempts had been made a few years before under Benjamin Ferrey. For these later works, which were brought to a conclusion in 1866, Mr. Giles, of Taunton, was responsible, and if there are certain details of which it is impossible to speak in terms of commendation, it must be confessed that few old churches have in this same way risen to a new life, both morally and artistically, out of a state so seemingly hopeless.

Mr. Ferrey's work consisted chiefly in some repairs to the chancel and the insertion of a new east window, towards which stained glass—since removed to the west end—was contributed by Wailes, and he also designed the stone canopy over the tomb of the saintly Bishop Ken, who

Dowered with moral power to cope,
In peaceful mien persisting;
A braver Becket—who could hope
To conquer unresisting.

Dying at Longleat (March 19, 1711) in nonjuring retirement at the age of seventy-three, Ken was, according to Bowles, buried at sunrise under the east window of Frome Church, a grating of iron bars, bent into the form of a hearse, and across which an iron mitre and pastoral staff are laid, being placed over his grave:—

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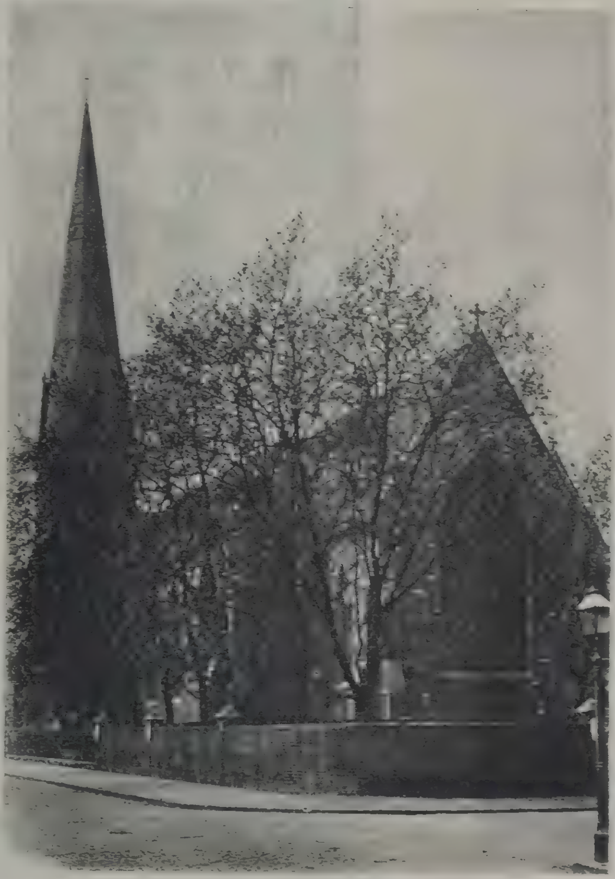
* As Dean of Peterborough, Dr. Monk was the prime mover in the rebuilding of the cathedral's choir from the designs of Blore. The handsome Italian Gothic church of St. James Less at Upper Garden Street, Westminster, built and endowed to the Bishop's memory by his daughters, was completed from the designs of Street in 1861.

> A basket work where bars are bent—
>   Iron in place of osier;
> And shapes above that represent
>   A mitre and a crozier.

In Exeter Cathedral Hardman's glass, in the exquisitely beautiful Decorated window inserted in the northern transeptal tower as part of the great work of restoration carried out 1870-76, represents in its six lights as many effigies of Holy Women, somewhat over-refined in drawing and posture, while certain tinctures are not very agreeable. At Torquay some much earlier and more archaic specimens from the same artist's hands may be seen in St. Mary Magdalene's Church—a large but unsatisfactory Early English building of about 1848-49, from the designs of Salvin, but recently equipped with some truly magnificent choral fittings, reredos, &c., in the style of Henry VII., by Mr. John Oldrid Scott. The glass in question, which fills the five lancets of the apse and one at the west end of either aisle, represents in firm, brilliant tones two tiers of seated figures, having Early English accessories and groundwork of ruby or blue. St. Matthias's Church—a good Middle Pointed structure in the same seaside resort—has a couple of Hardman's windows in their 1860-70 tinctures. A two-light window on the east side of the south transept is the best, the altar window, a four-light composition, having subjects illustrative of the Resurrection, exhibiting his artist's too great fondness for over-refinement, that *crambe repetita* of pose and tincture by which at a glance any of their works can be detected with little fear of a mistake. Of Hardman's contributions to the vitreous decoration of Oxford, the glass filling the windows of Magdalen College Chapel is, perhaps, the most important and extensive. It was inserted between 1850 and 1860, mainly through the generosity of the late Lord Selborne, who for several years devoted the income of his Fellowship to form a fund for this purpose.*

Before this, four windows on either side had the sepia glass, by one Greenbury, which had been moved hither in 1741 from the ante-chapel. Until 1762 the last window on either side remained plain, when William Price filled it with figures of the postles. Upon the introduction of Hardman's glass—which represents single effigies of various saintly persons—Greenbury's windows were taken back to the ante-chapel, having escaped the destruction which overtook those in the chapel proper, and which Dr. Bloxham opines was effected by the roopers who came in the name of the Parliamentary officer visiting Oxford in May 1649, but it seems more probable hat their destruction was effected at a later period, *i.e.* in 1651, when there is a charge in the college accounts for new glass for he chapel windows.

All Souls College, the west window of whose chapel xhibited a specimen of Eginton's work, had its two tiers of even lights refilled by Hardman with a representation of the Doom, during the important work of restoration carried out hirty years ago under the direction of Scott. In St. Mary's Church the same artist's window in memory of Rev. Charles Marriot (vicar from 1850 to 1858), with its eight figures of Old estament characters, recalls by its brilliant tinctures the glass t Tenbury. Less firm and rich is the west window of the not ar distant St. Helen's, Abingdon, that so well-known and noble ve-aisled riverside church restored between 1871 and 1873 y the late Mr. Woodyer. Here the window, a Perpendicular ne of six lights, has below the transome three subjects om the life of the patron saint and three from that of t. Catherine, typifying, so to speak, the six groups from the ife of Our Lord in the upper tier of lights. Returning once ore to London prior to making it a *point de départ* for a ssing glance at some of Hardman's work in the northern d southern shires, three windows in the church of St. Paul, Bow Common, which, despite the lonesome sound of its locale, is situated in a thickly-populated quarter of the town, deserve notice. The small two-light window on the south side of the sanctuary, with its rich, decided tones, and its six seated effigies treated medallion-wise, will be regarded with interest as a memorial to the church's founder and donor—William Cotton, of Leytonstone, who died in 1866—and whose exertions in the cause of metropolitan church extension, particularly in the eastern districts, won for him from Bishop Blomfield * the honourable title of "lay archdeacon." Hardman's other glass in St. Paul's, Bow Common, which in motif may be said to take up ground intermediate between St. Mary Magdalene, Munster Square, and St. Mary, Stoke Newington, though it cannot be said to possess all the graceful qualities of either, is in the tall two-light window at the west end of the north aisle and the last three-light one of the opposite aisle. In both these are two tiers of canopied groups, very clearly drawn, and confined as they very properly are to a single light, strengthen the framework, which in those windows left with plain glass have a somewhat wire-drawn and attenuated look, as though the architect—Rhode Hawkins†—had sought his inspiration among some Middle-Pointed German examples.



St. Paul's, Bow Common, from the South-East.

Finished in 1858, St. Paul's, Bow Common, is a ragstone edifice comprising an unclerestoried nave with aisles, all under separately gabled roofs; a tower and spire forming a south-western porch; and a sanctuary, the chancel being constructed within the last bay of the nave, from which it is separated by a low stone western wall and parcloses, while the caps of its columns and responds are distinguished from those of the remaining bays, which are simply moulded, by boldly foliaged ornament. In a church of this kind where the clerestory is absent and the aisles are commensurate in height with the nave, an almost equality in breadth between those members seems requisite for the preservation of poetry and picturesqueness.

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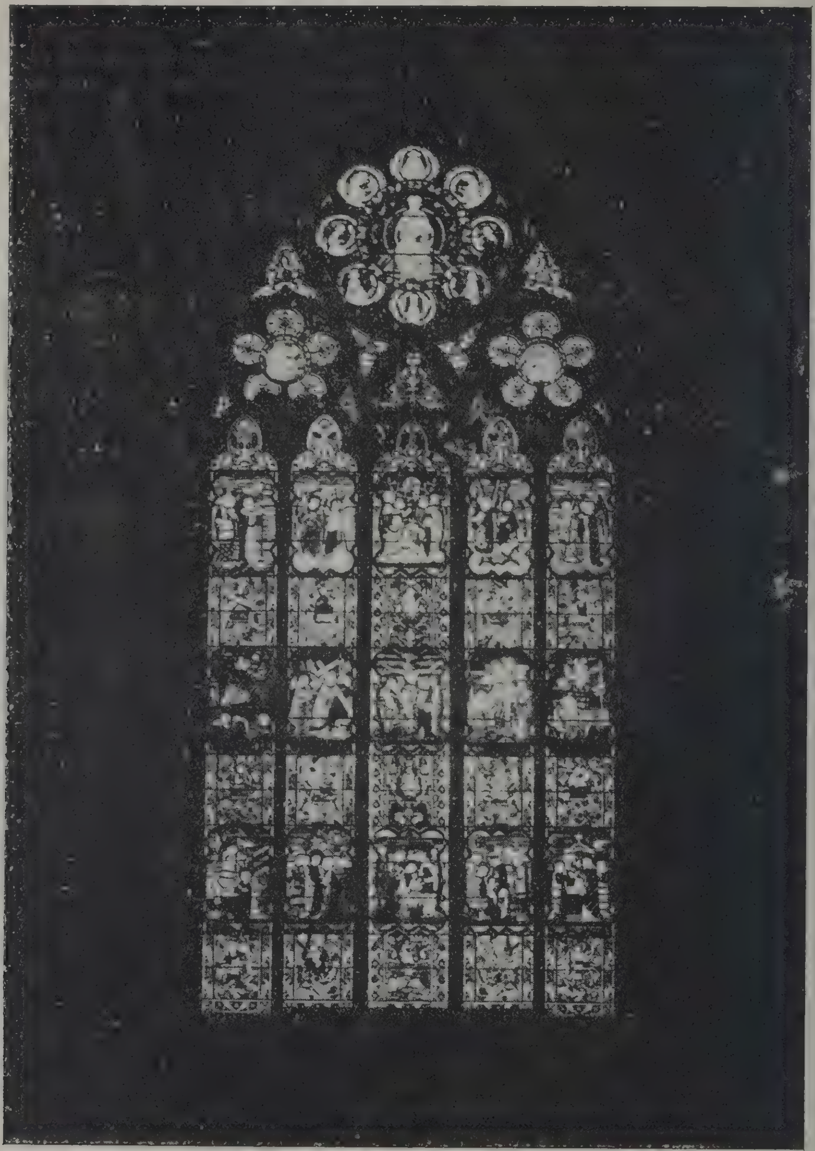
* "In a former number we had occasion to announce that the brass gle lectern in St. John's College Chapel, Cambridge, attested the interested munificence of a late honoured Fellow of that college. e are happy to be able to record a similar act of religious generosity the part of a Fellow of St. Mary Magdalen College, Oxford, who s offered to resign the proceeds of his Fellowship for the purpose of ing the windows of his college chapel with stained glass in place of chiaroscuro paintings with which they are now filled."—(*The clesiologist*, March 1845.)

* It was to St. Paul's, Bow Common, that Bishop Blomfield bequeathed, on his death-bed, the gold Eucharistic plate that had been made for Queen Adelaide, appointing the founder's youngest son—Rev. A. B. Cotton—first incumbent.

† Although we perceive in this church a desire on the part of its architect to emancipate himself from insular tradition, it is not so markedly shown as in his subsequent works—St. Michael, Star Street, Paddington, and St. Michael, Exeter.

At St. Paul's the excessive breadth of the nave compared with that of the aisles, especially when viewed from the Burdett Road, is by no means pleasing, and this gives an appearance of shortness to an interior measuring 110 feet, which is still further increased by the elongated form of the east window. Had it been kept higher and space afforded below for a reredos of ampler dimensions, the whole church would have gained in dignity and impressiveness.*



The East Window, St. Paul's, Bow Common.

Externally, the most pleasing view of St. Paul's, Bow Common, is that from which the illustration is taken, the sanctuary projecting in such a manner as to break the outline and to mitigate the disagreeable inequality between the breadths. About thirty years ago the ritual arrangements of this church underwent improvement at the hands of Mr. Street, who designed the reredos, the chancel screens above noticed, the east window and the painted effigies on the wall-space on either side of it. The stained glass in the east window, which previous to its location in St. Paul's had figured in the Great Exhibition of 1862, was executed by the Messrs. Powell, and is interesting as one of the earliest works evincing a disposition on the part of those artists to emancipate themselves from conventionality. The subject is the Radix Jesse, but the delicately tinctured effigies illustrating it are crossed thrice by a band of subjects from the Life of Our Lord, in which blue, purple and red so predominate that it is only after a little study that the idea of the window—which, iconographically considered, is most masterly — can be unravelled. Beginning at the left-hand bottom corner, we have the Annunciation, the Visitation, the Nativity, the Epiphany and the Presentation in the Temple; in the central band of subjects are the Agony in Gethsemane, the Processio to Calvary, the Crucifixion, the Deposition in the Tomb and th Resurrection; while the uppermost range has in the centre th Ascension, with, in either two side compartments, saints an angels in adoration. The large circle has the Majesty, a whit figure against a ruby ground, and the smaller one in either su fenestration a censing angel. The chief point to be noticed i this window is unconventionality of treatment, the thirt small square compartments into which the five lights a parcelled being free from those accessories so *de rigueur* that time among disciples of the traditional Gothic scho The large six-light west window of this church, as well as th at the end of the south aisle, is also by Powell, and will noticed hereafter.

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* The erection upon the dwarf wall at the entrance to the chancel of a screen, and its continuation across the aisles in the Devonian manner, would doubtless take away that air of shortness which the interior wears.

PLANNING PUBLIC ELEMENTARY SCHOOLS.

THE following are the latest official rules of the Board of Education to be observed in planning and fitting-up public elementary schools :—

School planning is the science of thoroughly adapting every part of a building, even the minutest detail, to the work of school teaching. Convenience of plan, suitable lighting, proper subdivision into classes and thorough ventilation, with warmth but without draughts, are its leading essentials. Attention to small points is of extreme importance. Sanitary laws are here as vital as in a hospital. The school architect is recommended first to perfect his plan. His own skill should then enable him to clothe it with form, proportion, character and colour.

These building rules are intended to assist school managers, School Boards and their architects to produce the most compact, convenient and economical plans of school buildings. The annual cost of maintenance should be kept in view as much as the capital expense. It is desirable that, before instructing an architect, the teaching staff of a school should be well considered, so that the number of rooms and the accommodation of each may be approximately settled before the expense of building is incurred.

Requirements.

School Boards and school promoters are requested to note that the Education Department require the following plans, and that inattention to such requirement causes unnecessary correspondence and delay :—

I. A block plan of the site, drawn in ink to a scale of 20 feet to an inch. This plan must indicate—(*a*) The position of the school buildings ; (*b*) outbuildings ; (*c*) playground ; (*d*) drains (collateral and main), with their fall and depth below ground ; (*e*) entrances ; (*f*) boundary walls, or fences, and their nature ; (*g*) roads ; (*h*) the points of the compass ; (*i*) the levels of the ground at the principal points.

N.B.—For approval of site alone, the plan should show (*g*) (*h*) and (*i*).

II. A plan of each floor of the schoolrooms (and teacher's or caretaker's residence, if any) drawn in ink to a scale of 8 feet to an inch. The internal fittings of the rooms (fireplaces, groups of desks, benches, &c.) must be accurately shown. The plan should also state whether the rooms are intended for boys, girls or infants.

In cases of enlargement, a plan showing the buildings as they exist is needed.

III. Sections and at least four elevations, also drawn in ink to a scale of 8 feet to an inch. The ceiling, the positions of window-heads in relation thereto, and the mode of ventilation must be shown.

N B.—(*a*) Pencil drawings cannot be received, but coloured tracings in ink on tracing cloth may be submitted while plans are in the preliminary stage of pencil, so that suggested alterations can be adopted without difficulty or expense ; (*b*) diagrams are of no value and cannot be accepted ; (*c*) in the case of enlargements or alterations the whole site and the existing building should be as accurately shown in every respect as the proposed changes ; (*d*) all plans should be dated, the scales drawn on and dimensions figured.

IV. A detailed specification separated under the several branches of the building trade.

V. A section of the desk proposed to be used, drawn to a cale of 1½ inches to a foot. N.B.—The edge of the desk when used for writing should be vertically over the front edge of the eat.

BUILDING RULES.

1. *Planning and Accommodation.*

1. In planning a school the first thing is to seat the children n the best manner for being taught. The accommodation of ach room depends not merely on its area, but also on its shape especially in relation to the kind of desk proposed), the positions of the doors and fireplaces and its proper lighting. The second point is to group the rooms together in a compact and convenient manner.

2 *and* 3. *Schoolrooms.*

2. Every school must have a schoolroom as hereunder or a entral hall as under Rule 8. The proper width for a schoolroom is from 18 to 22 feet. In a room 18 feet wide groups of ng desks, three deep should be used ; where four rows are ed the width should be 21 feet 6 inches, and if the width is feet dual desks, five rows deep, are most suitable. (For assrooms, see Rule 7)

(*a*) Accommodation in schoolrooms for elder children is lculated by the number of children seated at desks and nches, subject to a minimum of 10 square feet per child being ovided. For the mode of calculating accommodation in ssrooms see Rule 7, in infant schools see Rule 16 (*f*).

(*b*) Double bank schools (now almost obsolete) require oms 32 feet wide, walls left clear for three rows of desks and ple lighting from windows on both sides extending to ceiling.

(*c*) Wasted space cannot be considered.

3. The doors and fireplaces should be arranged so as to allow the whole of one side of any school or classroom to be left free for the groups of benches and desks.

(*a*) No schoolroom lighted from one side only can be approved. The gable ends should be fully utilised for windows. (See also Rules 9 and 9 (*b*)).

4. *Walls, Floors and Roofs.*

4. The walls of every room used for teaching, if ceiled at the level of the wall-plate, must be at least 12 feet high from the level of the floor to the ceiling, and if the area contain more than 360 superficial square feet, 13 feet, and if more than 600, then 14 feet.

(*a*) The walls of every room used for teaching, if ceiled to the rafters and collar beam, must be at least 11 feet high from the floor to the wall-plate, and at least 14 feet to the ceiling across the collar beam.

(*b*) Great care should be taken to render the roofs impervious to cold and heat.

(*c*) Roofs open to the apex are not approved. They can only be permitted where the roofs are specially impervious to heat and cold, and where apex-ventilation is provided. Iron tie-rods are least unsightly when placed horizontally.

(*d*) The whole of the external walls of the school and residence must be solid. If of brick, the thickness must be at least one brick and a half, and if of stone at least 20 inches.

(*e*) All walls, not excepting fence walls, should have a damp-proof course just above the ground line.

(*f*) The vegetable soil within the area of the building should be removed, the whole space covered by a layer of concrete not less than 6 inches thick, and air bricks inserted in opposite walls to insure a through current of air under floors for ventilation to joists.

(*g*) Timber should be protected from mortar and cement by asphalte or tar.

5. *Entrances.*

5. Entrances should be separate for each department. In large schools more than one entrance to each department is desirable. (See also Rule 10.) The principal entrances should never be through the cloak-room. Entrance doors and the doors of main rooms should open outwards as well as inwards. A porch should be external to the schoolroom. An external door having outside steps requires a landing between the door and the steps.

6. *Cloakrooms and Lavatories.*

6 Cloakrooms should not be passages and should be external to the schoolrooms and classrooms, with gangways at least 4 feet wide between the hanging-rails and amply lighted from the end. They should not be placed against a gable wall. (See Rule 3 (*a*)). The hanging-rail should be arranged so that the children can enter and leave the cloakroom without confusion or crowding. Hat-pegs should be 12 inches apart, numbered and of two tiers. The lineal hanging-space necessary to provide a separate peg for each child is thus 6 inches.

Thorough ventilation is essential, so that smells are not carried into the school.

Lavatory basins are needed. (See Rule 13 (*h*)). Girls' schools require a larger number than boys or infants'.

A lock-up slop sink, water tap and cupboard are desirable for the caretaker.

7. *Classrooms.*

7. Classrooms are calculated at 10 square feet if not providing accommodation for more than sixty children. Six rows of dual desks or five rows of long-length desks are permissible in such classrooms. Rule 2 applies to all rooms providing accommodation for more than sixty, or being more than 24 feet 8 inches deep from the window wall.

In all classrooms the children's desks should be so arranged that the teacher's desk shall be not more than 20 feet from the centre of the back row, and that that row shall not subtend an angle greater than 60 deg. at the teacher's desk.

(*a*) The minimum size of classroom is 18 feet by 15 feet. If desks are placed longitudinally the width should not be less than 16 feet. This latter width is also allowed in schoolrooms of very small size.

(*b*) The classrooms should never be passage-rooms from one part of the building to another nor from the schoolrooms to the playground or yard, and should be on the same level as the schoolroom. Each should be easily cleared without disturbance to any other room. Doors should open both ways.

(*c*) The number of classrooms should be sufficient for the size and circumstances of the school.

(*d*) The excessive use of movable partitions should be avoided.

8. *Halls.*

8. Large schools are sometimes planned with a central hall, from which the classrooms are entered. The hall must be fuly lighted, warmed and ventilated, and must contain a floor space

of not less than 1,200 square feet. Halls of excessive size are not approved.

It is not desirable, as a rule, to provide for the teaching of classes in a central hall, except in the case of a mixed school, where the presence of a teacher in the hall teaching a class is beneficial in keeping order among the children passing through.

In infant schools a class in the hall is especially to be avoided, because the exercises and marching of the infants prevent it from being efficiently taught.

In boys and girls' schools one class (or under special circumstances two classes) may sometimes be allowed in the central hall, if the hall is suitably planned for the purpose The position of such class or classes should be shown on the plan.

9. *Windows.*

9. Every part and corner of a school should be fully lighted, The light should, as far as possible, and especially in classrooms be admitted from the left side of the scholars. [This rule will be found greatly to influence the planning. (See Rules 3 (*a*), 9 (*b*) and 11 (*a*)).] All other windows in classrooms should be regarded as supplementary, or for summer ventilation. Where left light is impossible, right light is next best. Windows full in the eyes of teachers or scholars are not approved. In rooms 14 feet high any space beyond 24 feet from the window wall is insufficiently lighted.

(*a*) Windows should never be provided for the sake merely of external effect. All kinds of glazing which diminish the light and are troublesome to keep clean and in repair should be avoided. A large portion of each window should be made to open for ventilation and for cleaning.

(*b*) The sills of the main lighting windows should be placed about 4 feet above the floor, and the tops of some should reach nearly to the ceiling with a portion made to swing. The ordinary rules respecting hospitals should here be remembered Large spaces between the window heads and the ceiling are productive of foul rooms.

(*c*) Skylights are objectionable, and should never be resorted to where windows are possible. Plans needlessly involving their use cannot be approved except in the case of central halls having ridge or apex ventilation.

10. *Staircases.*

10. A staircase should be fireproof and external to the schoolroom. No triangular steps or "winders" should be used. Each step should be about 13 inches broad, and not more than 5½ to 6 inches high. The flights should be short and the landings unbroken by steps. The number of staircases should be sufficient not only for daily use, but also for rapid exit in case of fire or panic.

11. *Ventilation.*

11. Apart from open windows and doors, there should be provision for copious inlet of fresh air; also for outlet of foul air at the highest point of the room; the best way of providing the latter is to build to each room a separate air chimney carried up in the same stack with smoke flues. An outlet should have motive power by heat or exhaust, otherwise it will frequently act as a cold inlet. The principal point in all ventilation is to prevent stagnant air. Particular expedients are only subsidiary to this main direction. Inlets are best placed in corners of rooms furthest from doors and fireplaces, and should be arranged to discharge upwards into the rooms. Gratings in floors should never be provided. Inlets should provide a minimum of 2½ square inches per child, and outlets a minimum of 2 inches. All inlets and outlets should be in communication with the external air. Rooms should, in addition, be flushed with fresh air from windows about every two hours.

A sunny aspect is especially valuable for children, and important in its effects on ventilation and health.

(*a*) Although lighting from the left-hand is considered so important, ventilation in summer demands also the provision of a small swing window as far from the lighting as possible, and near the ceiling.

12. *Warming.*

12. The warming should be moderate and evenly distributed so as to maintain a temperature of from 56 degs. to 60 degs. When a corridor or lobby is warmed the rooms are more easily dealt with, and are less liable to cold draughts. Where schools are wholly warmed by hot water, the principle of direct radiation is recommended. In such cases open grates in addition are useful for extra warming occasionally, and their flues for ventilation always.

(*a*) A common stove, with a pipe through the wall or roof, can under no circumstances be allowed. Stoves are only approved when (i) provided with proper chimneys (as in the case of open fires); (ii) of such a pattern that they cannot become red-hot or otherwise contaminate the air; (iii) supplied with fresh air, direct from the outside, by a flue of not less than 72 inches superficial; and (iv) not of such a size or shape as to interfere with the floor space necessary for teaching purposes.

(*b*) A thermometer should always be kept hung up in a school.

13. *Sanitary Arrangements.*

12. Water-closets within the main school building are not desirable, and are only required for women teachers. All others should be at a short distance and completely disconnected from the school. Privies should be fully 20 feet distant.

(*a*) The doors, staircases and passages leading from the schoolroom to the latrines (whether in mixed or in other schools) and the latrines themselves, must be separate for the two sexes, and constructed entirely apart from each other. In the case of a mixed school this rule especially affects the planning. Where passages or corridors are unavoidably used by both sexes, there must be complete supervision from the classrooms by sheets of clear glass

(*b*) Each closet must be not less in the clear than 2 feet 3 inches wide nor more than 3 feet, fully lighted and ventilated and properly screened or supplied with a door. More than one seat is not allowed in any closet.

(*c*) The children must not be obliged to pass in front of the teacher's residence in order to reach their latrines.

(*d*) The following table shows approximately the number of closets needed :—

	For Girls.	For Boys.	For Infants.
Under 30 children . .	2	1	2
,, 50 ,, . .	3	2	3
,, 70 ,, . .	4	2	3
,, 100 ,, . .	5	3	4
,, 150 ,, . .	6	3	5
,, 200 ,, . .	7	4	6
,, 300 ,, . .	8	5	7

Urinals in proportion.

(*e*) Cesspits and privies should only be used where unavoidable, and should be at a distance of at least 20 feet from the school. [Building Form "A," which may be obtained on application, gives suggestions as to their construction and arrangement.] Earth or ash closets of an approved type may be employed in rural districts, but drains for the disposal of slop and surface water are still necessary. The proximity of drinking-wells should be carefully avoided.

(*f*) Soil-drains must always be laid outside the building (on a hard even bottom or concrete) in straight lines with glazed stoneware pipes, carefully jointed in cement and made absolutely water-tight. A diameter of 4 inches is sufficient unless for drains receiving the discharge of more than ten closets Above this number the diameter should be 6 inches. The fall should never be less than 1 in 30 for 4-inch and 1 in 40 for 6-inch drains. An inspection opening or chamber should be provided at each change of direction so as to faciliate cleansing the drain without opening the ground. Every soil-drain must be disconnected from the main sewer by a properly constructed trap placed on the line of drain between the latrines and the public sewer. This trap must be thoroughly ventilated by at least two untrapped openings, one being the 4-inch soil pipe carried up full size above the roof, and the other an inlet pipe connected with the side of the trap furthest from the public sewer. Automatic flushing tanks are desirable where trough closets are used.

(*g*) Urinals must in all cases have a sufficient supply of water for flushing.

(*h*) Waste pipes from sinks or lavatories should be first trapped inside and then made to discharge direct through an outer wall over a trapped gulley.

14. *Desks.*

14 Benches and desks, graduated according to the ages of the children, should be provided for all the scholars and placed at right angles to the light. (See also Rules 3 (*a*) and 9.) The benches should be fitted with backs.

An allowance of 18 inches per scholar at each desk and bench will suffice (except in the case of the dual desk), and the length of each group should therefore be some multiple of 18 inches, with gangways of 18 inches between the groups and at the walls A desk for one child needs no gangway next the wall. In the case of the dual desk the usual length is 3 feet 4 inches, and the gangway 1 foot 4 inches.

(*a*) The desks should be very slightly inclined. An angle of 15 degs is sufficient. The objections to the inclined desks are that pencils, pens, &c., are constantly slipping from it, and that it cannot be conveniently used as a table The objection to the flat desk is that it has a tendency to make the children stoop. A raised ledge in front of a desk interferes with the arm in writing.

(*b*) No benches and desks, three rows deep, should be more than 12 feet long, nor, when four rows deep, more than 9 feet long. And no group of long desks in a schoolroom providing for more than sixty children should contain more than four rows of benches and desks, even when the width is more than 21 feet 6 inches (Rule 2), because in proportion as the depth is increased the teacher must raise his voice to a higher pitch and this becomes exhausting to himself, while at the same time it adds inconveniently to the general noise.

With the use of the dual desk the space between seat and desk disappears, as the children stand in the gangways.

15. *Sites and Playgrounds.*

15. Every school should have an open airy playground proportioned to the size and needs of the school, and the site should, if possible, have a building frontage in proportion to its area. The minimum size of site is, in the absence of exceptional circumstances, a quarter of an acre for every 250 children. If the school is of more than one storey this area may be proportionally reduced; but the minimum unbuilt on or open space of 30 square feet per child should be preserved.

(*a*) In the case of a mixed school of large size, playgrounds should be separate for the boys and girls.

(*b*) All playgrounds should be fairly square, properly levelled, drained, enclosed and fitted with some simple appliances. A portion should be covered, having one side against a boundary wall. A covered way should never connect the offices with the main building. Buttresses, corners and recesses should be avoided.

(*c*) An infant school should have its playground on the same level as the school and open to the sunshine.

16. *Infant Schools.*

16. Infants should not, except in very small schools, be taught in the same room with older children, as the noise and the training of the infants disturb and injuriously affect the discipline and instruction of the other children. Access to the infants' room should not be through the older children's schoolroom.

(*a*) There must be no opening wider than an ordinary doorway between an infants' and any other schoolroom, because of the sound of the infant teaching.

(*b*) An infant school (and playground) should always be on the ground floor, and if more than eighty scholars are admitted, should have one gallery and a small group of benches and desks for the occasional use of the older infants.

(*c*) No infant gallery should hold more than sixty-five infants, nor in a babies' room more than fifty. The back should consist of a wooden rail fixed slightly below the level of the children's shoulders. It should be well lighted from one side. The light for object lessons is as good from the right as from the left.

(*d*) The width of an infant schoolroom should be in proportion to its size, but not more than 24 feet. A covered marching ground is desirable.

(*e*) The babies'-room should always have an open fire, and e maintained at a temperature of about 65 degs. As a rule, t should not contain more than fifty children, and should be nder supervision from the schoolroom. Large schools may equire two communicating rooms for babies, one fitted with ow Kindergarten desks, the other providing ample floor space or exercises.

(*f*) The accommodation of an infant school is calculated at square feet for each child, after deducting wasted or useless pace. Care should be taken that the numbers are coneniently seated, and that space is left for marching.

(*g*) Where a second standard is taught in an infant school separate classroom is necessary, and its accommodation is alculated at 10 square feet per child.

(*h*) Infant classrooms should, as a rule, not contain more han sixty.

17. *Cookery.—Cookery Centres.*

17. (*a*) A cookery centre should be capable of accommolating one class of eighteen at practice and fifty-four at emonstration at any one time. It should contain not less han 750 superficial feet and 10,500 cubic feet. It should be pproached by a separate entrance. A recess for scullery urposes is necessary, and also a bonnet-room.

A gallery or raised platform with desks is necessary, and hould measure 25 feet by 12 feet 6 inches. This will permit eating accommodation to be provided for five rows of eleven hildren.

The floor space for practical work should not be less than 5 feet by 13 feet 6 inches, and should not be encumbered ith desks, cupboards and stoves.

The sink should be placed in full view of the teacher and hildren, and should be fitted with cold water supply and a aste-pipe.

The gas-stove should have a pipe fixed to the oven to carry ff noxious fumes.

In cookery and laundry centres the ventilation needs ecial arrangements. The temperature should not be allowed rise above seventy.

The apparatus for lessons in cookery should include such oves and other appliances as are usually found in the homes of e children.

Cookery Classrooms.

(*b*) A classroom used for cookery should, as a rule, contain at least 600 superficial feet and 8,400 cubic feet, and should be so placed that smells from it cannot pervade other rooms.

18 *Rooms for Special Instruction.*

18. Workshops and laundries should be of simple construction, and are best entirely apart from the school.

Unnecessary rooms will not be sanctioned. One room for drawing, or chemistry, or manual instruction, or laundry work, or cookery will often serve for several schools in the same neighbourhood.

The plan, arrangements, construction, lighting and ventilation of a manual instruction room should be suitable for a workshop rather than for a school.

The construction should accordingly be simple. The roof may be either of lean-to, or other ordinary form, according to circumstances. Its height at the windows in front of the benches need not be more than 10 feet. The light must be ample. The temperature should not be so high as in an ordinary classroom. A flat ceiling is not, as a rule, necessary. The ventilation should be ample by inlets at a height of 5 feet from the floor, and by outlets at the highest point.

Laundry centres should contain 750 superficial feet and should have a gallery or raised platform with desks for forty-two children.

A room used for laundry work should contain at least 600 superficial and 8,400 cubic feet.

Laundry tables should be large enough to allow at least 3 feet of space for each child when ironing.

19. *Teacher's House, &c.*

19. The residence for the master or mistress should contain a parlour, a kitchen, a scullery and three bedrooms, and the smallest dimensions which their lordships can approve are :—

For the parlour . .	12 ft. by 12 ft.	of superficial area ;	8 ft. } in height to 8 ft. } wall-plate. 8 ft. if ceiled at wall-plate ; or 7 ft. to wall-plate and 9 ft. to ceiling.
,, ,, kitchen . .	12 ft. by 10 ft.		
,, one of the bedrooms	12 ft. by 10 ft.		
,, two other bedrooms	9 ft. by 8 ft.		

(*a*) The residence must be so planned that the staircase is immediately accessible from an entrance lobby and from the parlour, kitchen and each bedroom, without making a passage of any room. (*b*) Each bedroom must be on the upper storey, and must have a fireplace. (*c*) The parlour must not open directly into the kitchen or scullery. (*d*) There must be no internal communication between the residence and the school. (*e*) Windows should be carried up as nearly to the ceilings as practicable. (*f*) There must be a separate and distinct yard, with offices. (*g*) A caretaker's house need not be quite so large. (*h*) All houses should be separate from and not built as part of the school-house.

20 *and* 21.—*Loans.*

20. No loan of money can be obtained from the Public Works Loan Commissioners unless the whole cost of the school, exclusive of site, legal expenses, extra rooms for instruction authorised by the Code, and residences (if any), is kept within the sum of 10*l.* per child accommodated. An allowance will also be made in reference to the cost of a central hall not calculated in the accommodation. (Rule 8.) Rooms for extra subjects recognised by the Code, such as drawing, chemistry, cookery, &c., will have an allowance varying from 15*s.* to 20*s.* per square foot, and workshops one varying from 10*s.* to 15*s.* per square foot. From 275*l.* to 500*l.* will be allowed for a caretaker's house. Whether the necessary loan be borrowed in the open market or not, extravagant plans cannot be approved.

21. The Department do not entertain applications for loans in respect of expenditure incurred without their previous sanction, which is based on plans, specifications and actual tenders. Applications for loans should therefore include all the items in the first instance.

In order to secure due economy and the avoidance of confusion at completion a provisional prime cost amount of not more than 2½ per cent. may, if considered desirable, be included in building contracts in view of unavoidable contingencies, but the contract should contain a clause that no claim for extras can be even considered unless the work has been ordered in writing by the architect, and the order bears the counter-signature of the clerk of the School Board.

The Society of Architects will hold the second ordinary meeting for the session 1900-1901 at St. James's Hall, Piccadilly, W., on Thursday, December 13, at 8 P.M. A paper will be read by Mr W. Cooper, hon. corr. sec., on "Architects' Examinations," and will be followed by a discussion.

THE LATE CHARLES BARRY.

The will of the late Charles Barry, F.S.A., of Stanley House, Forest Hill, and of Parliament Mansions, Victoria Street, architect, past president R.I.B.A., who died on June 2 last, aged seventy-six, son of the late Sir Charles Barry, R.A., appoints as executors his son Charles Edward and Arthur Mainley Cope, solicitor, to the latter of whom the testator bequeathed 20*l.* Probate has been renounced by his brother, Sir John Wolfe Barry. Mr. Barry bequeathed to William Griffiths 100*l.*, to Agnes Hazel 50*l.*, to other servants of five years' service each 20*l.*, and to a friend if married during the testator's lifetime, or within five years after his death, 100*l.* Mr. Barry bequeathed to his son Charles Edward the lease of his professional offices, the effects there, his masonic clothing and jewellery, his medals, and his Cross of the Legion of Honour, a bust and a portrait of his father, the late Sir Charles Barry, and a large drawing by his father of Westminster improvements. He left his residuary estate in trust for all of his children, but the share of any unmarried daughter and of any daughter who having been married is a widow is to be half as much again as the share of each other child. The late Mr. Barry's estate, which includes the proceeds of life insurance policies for 8,800*l.*, has been valued at 10,629*l.* 7*s.* 7*d.* gross and 7,349*l.* 13*s.* 9*d.* net. He desired that his grand piano and Sheraton sideboard should be sold.

TESSERÆ.

The East Window, St. Margaret's, Westminster.

According to tradition, the east window in the church of St. Margaret came from Dort, in Holland. The magistrates, it is said, desiring to present Henry VII. with something worthy to adorn his magnificent chapel then building at Westminster, directed this window to be made, and Henry and his queen sent their pictures to Dort, whence their portraits are represented in it. But the window is by some experts considered to be English work, and it is not adapted for the openings in the chapel of Henry VII. King Henry dying before the window was completed, it became the property of an abbot of Waltham, who placed it in his abbey, where it remained until the dissolution of it in 1540. Robert Fuller, the last abbot, removed it to a chapel in New Hall, Lord Ormond's seat, in Wiltshire, which was afterwards possessed by Thomas Bullen, father of Anne Bullen. In Elizabeth's reign New Hall belonged to the Earl of Sussex; of his family the Duke of Buckingham bought it. His son sold it to General Monk, who buried the window underground, but after the Restoration replaced it in the chapel. His son dying without issue, and the Duchess neglecting the seat, the chapel became ruinous. John Olivius, having probably purchased the estate from the heirs of the Monk family, demolished both house and chapel, but preserved the glass in the hope of selling it for some church. It lay cased up in boxes till Mr. Conyers purchased it for his chapel at Copt Hall, near Epping, when he employed Price, an artist, to repair it. Mr. Conyers, building a new house, sold the window for 400 guineas to the Parliamentary committee for repairing St. Margaret's Church in 1758.

Roman Subterranean Houses.

Guattani has published the plan of one of these retreats against the heat of summer, annexed to the palace of the Cæsars at Rome, and Count Caylus mentions another excavated at Sacrofano. The former consists of a souterrein and ground floor above, with private passages and closets. One room is adorned with arabesques in gold upon a white ground; another with arabesques and bas-reliefs painted in gold upon a ground of azure, and of azure upon a ground of gold. The souterrein of Sacrofano has many rooms with corridors. The vault of the largest room is painted in fresco, representing animals and figures in poor taste. The frieze below was adorned with bas-reliefs moulded in terra-cotta and fastened with leaden nails. These bas-reliefs are well done and superior, as is generally the case in Roman antiquities, to the paintings.

The Old English "Hundred."

The principal subdivision in a county is the hundred, a district which in its origin bore relation rather to the population than to any uniform geographical limits. Hallam considers it to have been a district inhabited by 100 free families, and that a different system prevailed in the northern from that of the southern counties; in proof of which he contrasts Sussex, which contains 65 hundreds, and Dorsetshire, which contains 43, with Yorkshire, which contains only 26, and Lancashire, only 6. In the counties north of the Trent, and especially in Scotland, this subdivision is often called a wapentake. That the division into hundreds was known among the Germans, even in the time of the Roman invasion, is argued from two passages in Tacitus, and hence Spelman infers the identity of the wapentách or military array (taking of weapons) and the hundred court. Sir Francis Palgrave says that the burgh was only the enclosed and fortified resort, the stockade of the inhabitants of the hundred. The subdivision of the hundred was the tithing, composed, as it is alleged, of 10 free families, and having for an officer the tithing-man, a head constable. Whether in the barbarous times to which it is attributed so elaborate a system as we have sketched could have prevailed is at least most doubtful; but the theory is that somewhere about the time of Edgar (A.D. 950) the county was divided into tithings, of which 12 made a hundred—for the Saxon hundred meant 120—and hence perhaps the frequent use of the number 12 in our legal processes. These hundreds were presided over by their decanus, or headborough or hundred-man, and were represented in the shiremote; and this aggregate body, the shire, presided over by its earl and bishop or sheriff, conducted its own internal affairs.

Mediæval Chapels in London.

London still boasts of four remarkable private chapels, and what is not a little curious, each a striking specimen of a different age of Christian architecture. The first is that solemn Romanesque remnant, the desecrated private chapel in the White Tower, with its miniature apse and circumambient aisle and dark triforium. The second, of the First Pointed age, is the private chapel of Lambeth Palace, which though fearfully modernised, yet bears all the marks of its origin, with its eastern window of five lancets, and its mutilated but still very rich west door. The third and most perfect is St. Etheldreda's Chapel in Ely Place, formerly the private chapel of the Bishop of Ely's Palace, an exquisite specimen of Middle Pointed. Fourth, comes the chapel of the ancient Savoy Palace, a Third Pointed building. This chapel formerly boasted of an elaborate reredos, of which some fragments still remain oppressed by cinquecento monuments. In the restoration which was carried out sixty years ago nothing was done to move these or restore the east end to its old condition, but immediately over the altar were placed inscription niches travestying the ancient reredos.

GENERAL.

M. Herault has bequeathed a million of francs to the Municipal Council of Angers, of which the larger part is to be applied to the restoration of the musée, the enlargement of the hôtel de ville, the erection of a superior school, and new hospital buildings.

Mr. Cecil Rhodes has subscribed 3,000*l.* towards the fund for building a war memorial in the cathedral at Cape Town.

An Exhibition of drawings by the late Sir F. W. Burton will shortly be opened in the National Gallery, Dublin.

The Municipal Council of Paris have approved of the proposal that one of the streets in the eleventh arrondissement is to bear the name of Charles Garnier, the architect of the Opera House.

The Bishop of Liverpool has appointed a small committee of laymen to consider the vexed question of a site for the proposed new cathedral at Liverpool.

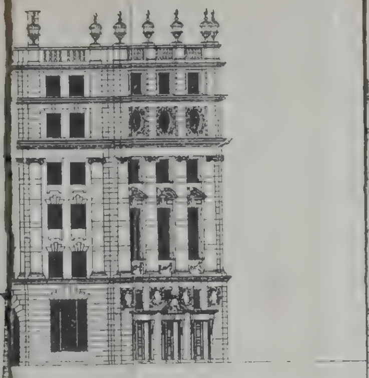
The President of the Board of Education has appointed a committee, consisting of Sir William de W. Abney, K.C.B., F.R.S. (chairman), Sir Philip Magnus, Sir Swire Smith, Mr. G. R. Redgrave, Mr. W. Bousfield, Mr. W. Vibart Dixon, with Mr. A. E. Cooper, Board of Education, South Kensington, as secretary, to consider the best means for co-ordinating the technological work of the Board of Education with that at present carried on by other educational organisations.

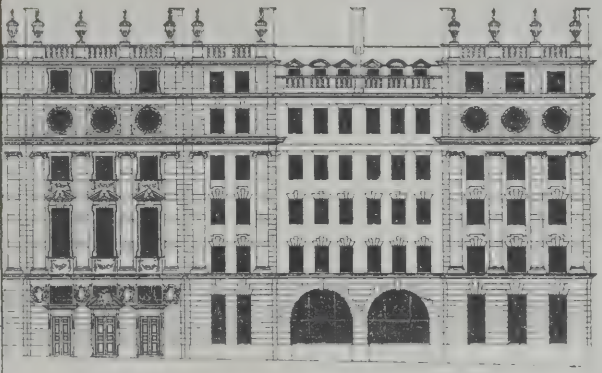
The London County Council on Tuesday passed estimates of 120,000*l.*, 13,500*l.*, 7,000*l.*, 15,000*l.* and 9,100*l.* in respect of the paving and other works for the following improvements:—Holborn to Strand Street, Southampton Row; Wandsworth Road, Lambeth, Kensington High Street and Cat and Mutton Bridge, Shoreditch.

Mr. R. E. Middleton will read a paper before the Surveyors' Institution next Monday on "The Future of the London Water Supply."

The Wax Models, by Edward Smith, prepared for the stone masks emblematic of the rivers of Ireland, on the façade of the Custom House, Dublin, have been obtained for the Dublin Museum.

Hampton Court Palace is to be embellished by the re-erection of thirteen wrought-iron gates which formerly stood at intervals between the palace private gardens and the river. The gates—magnificent specimens of wrought-iron work—have been exhibited in various museums throughout the country, and returned to Hampton Court after an absence of forty years.





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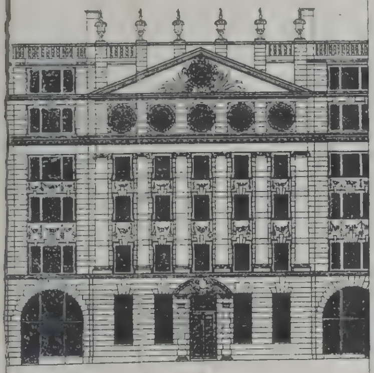

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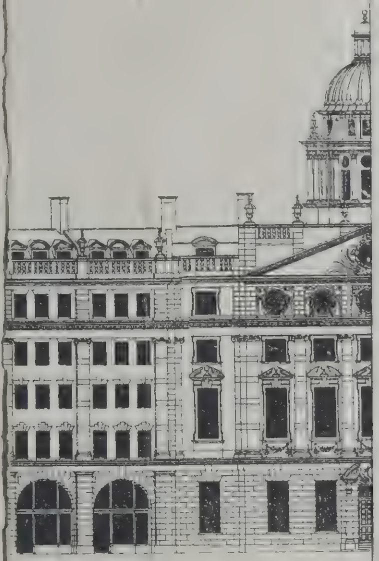

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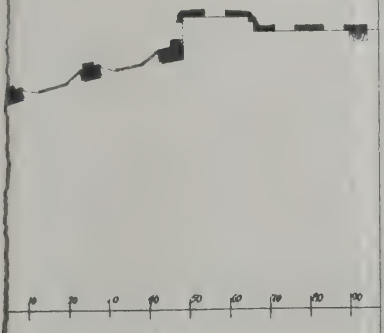

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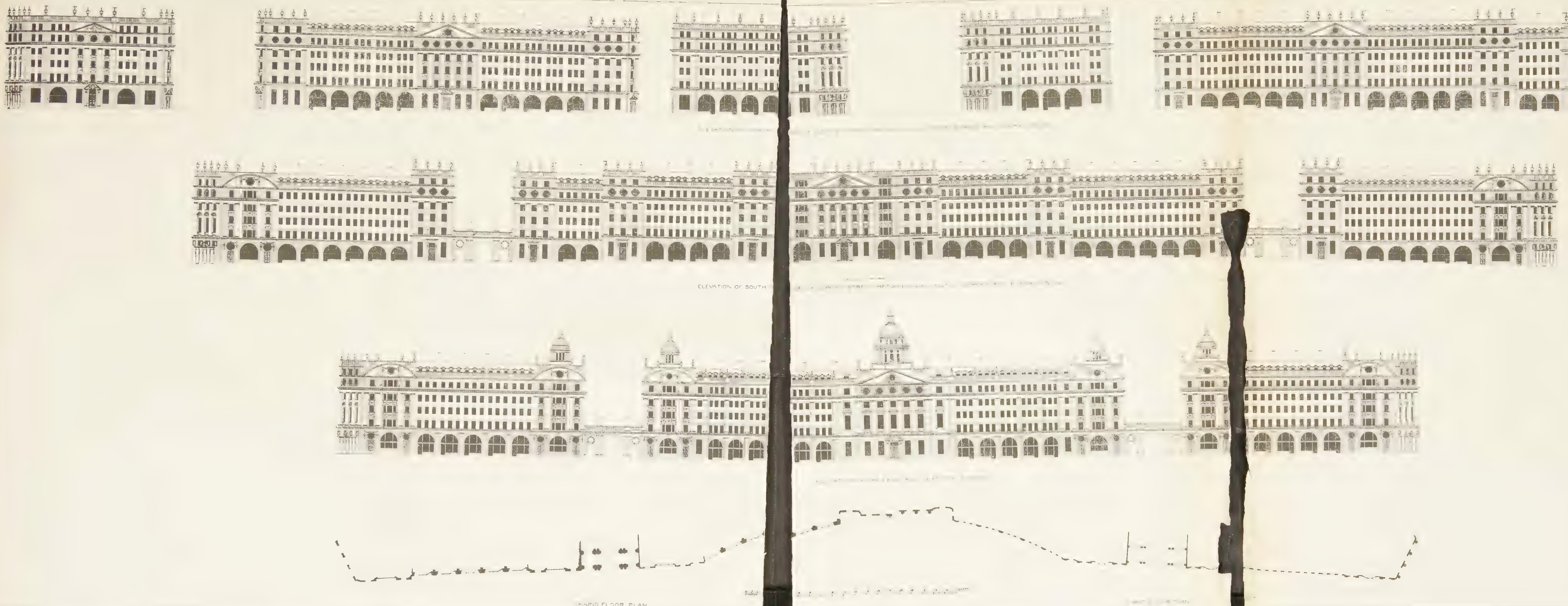

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UND FLOOR PLAN

The London Co unty Council Holborn and Strand Improvement. Design No. 21

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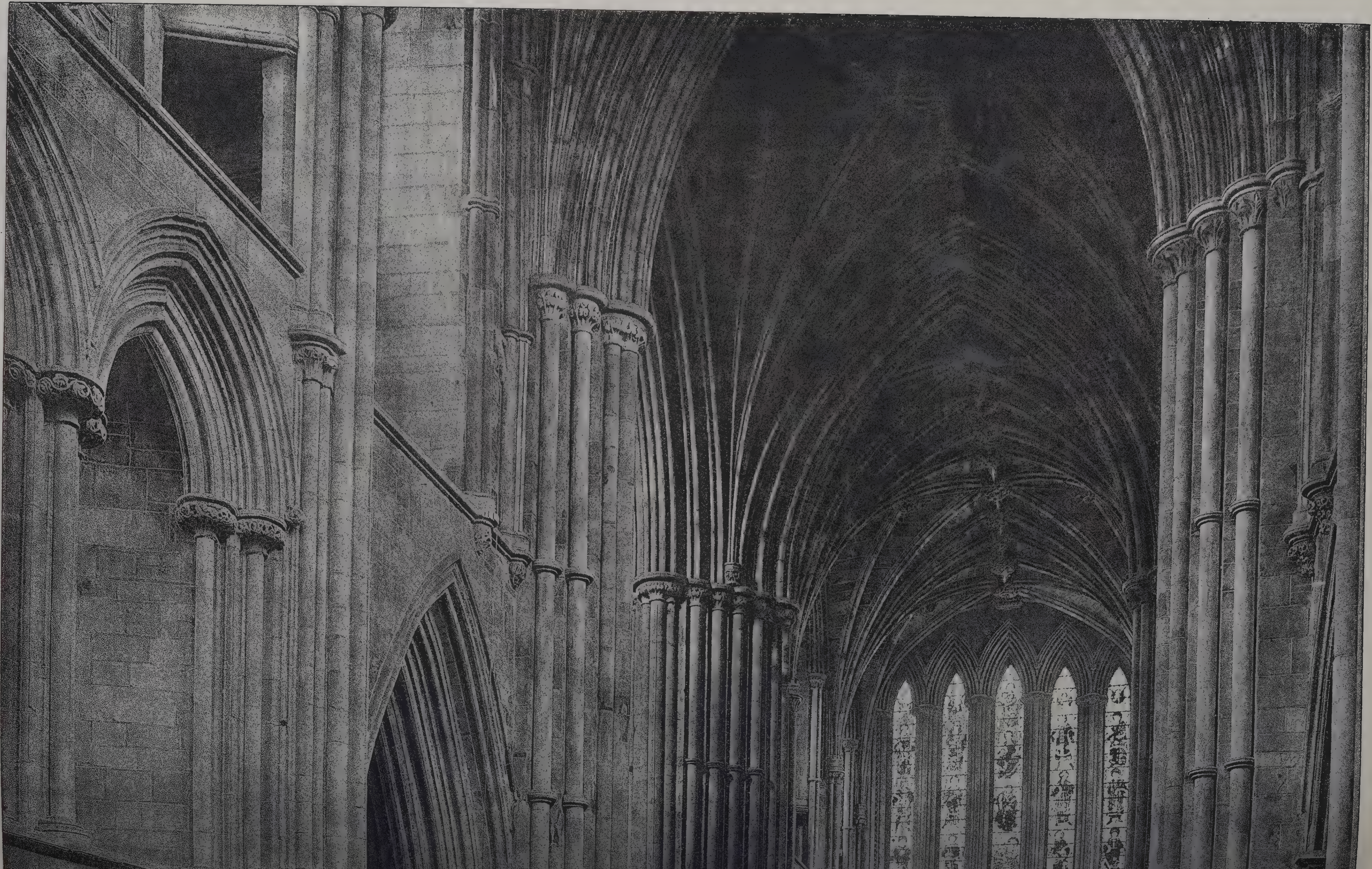

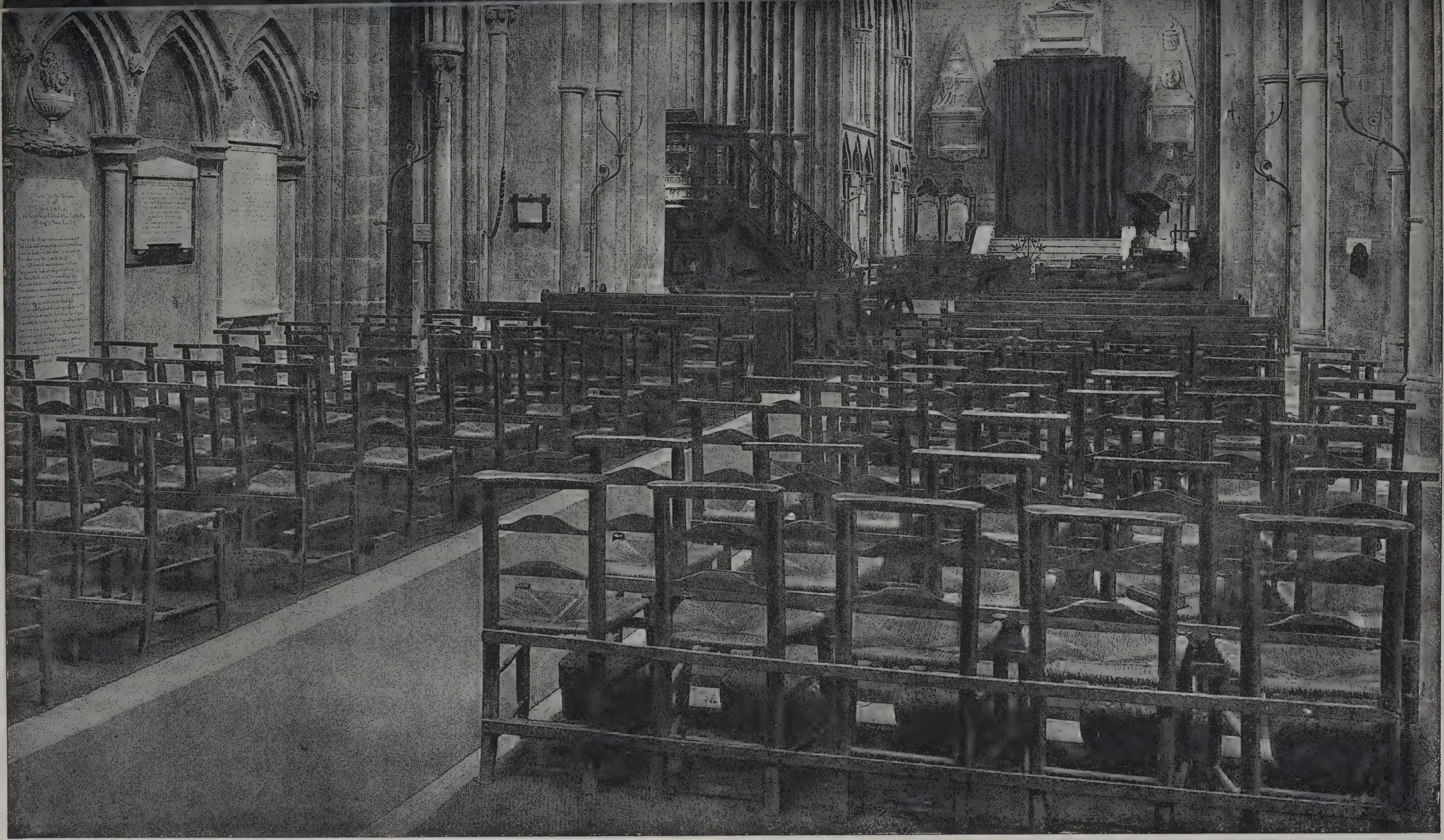

INK-PHOTO. SPRAGUE & Cº LTD 4 & 5. EAST HARDING STREET. FETTER LANE. E.C.

CATHEDRAL SERIES, No. 307.—LICHFIELD: THE TRANSEPTS, LOOKING NORTH.

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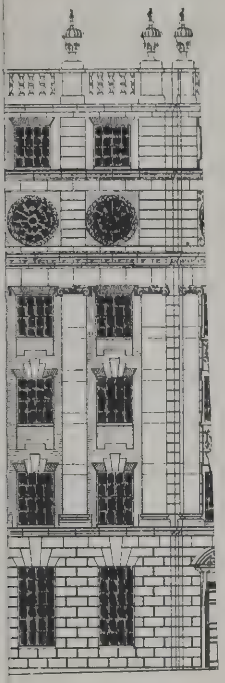

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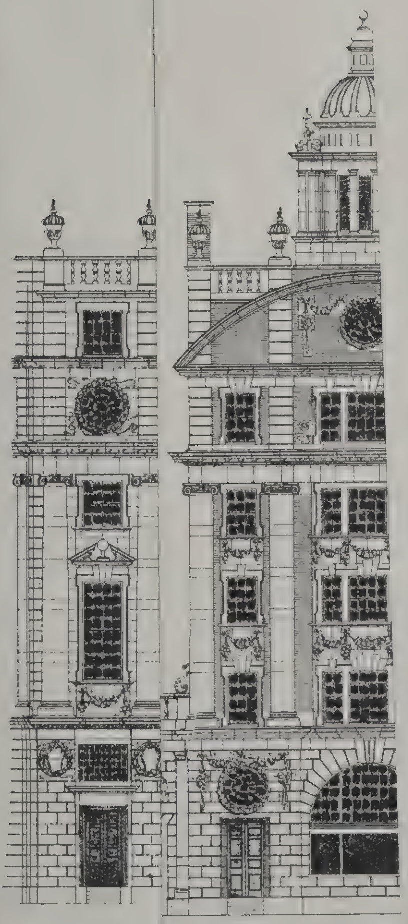

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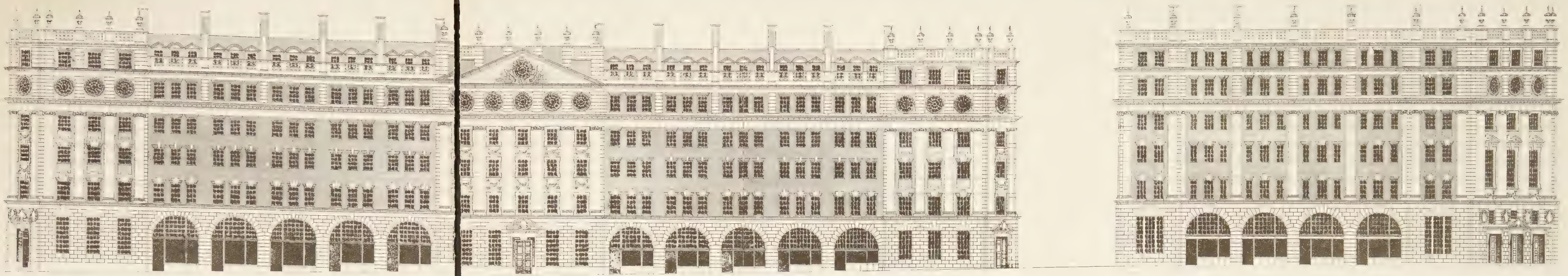
Design No. 21.

The Architect, Dec 7th 1900



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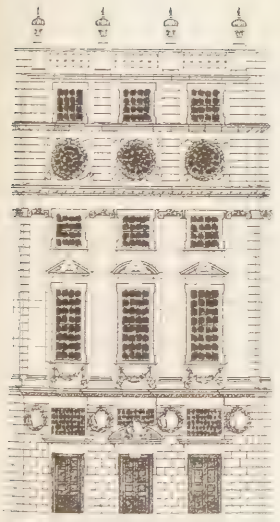

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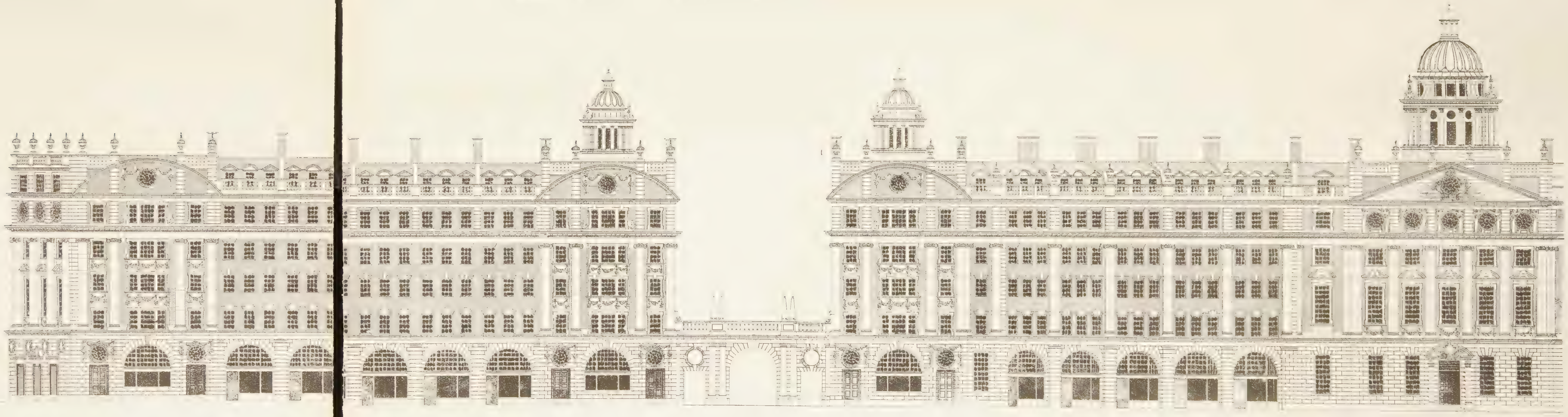

ELEVATION·OF·HALF·THE·STRAND·FRONTAGE·FROM·THE·END·NEXT WELLINGTON·STREET

PHOTO LITHO SPRAGUE & Co Ltd 4 & 5 EAST HARDING STREET FETTER LANE E.C.

THE LONDON COUNTY COUNCIL HOLBORN AND STRAND IMPROVEMENT. DESIGN NO. 21.

The Architect.

THE WEEK.

The decision of the House of Lords in the case of Hoddinott *v.* Newton, Chambers & Co., Limited, involves grave issues for one class of contractors. In the case in question the defendants did not erect the building in which the accident occurred. They were only called in subsequently in order to strengthen some of the columns with additional girders and iron stays. The scaffolding employed consisted of planks supported by trestles 8 feet high. Whether anything in the building caused one of the stays to sway, or whether a sudden weakness of Hoddinott was the real cause of the accident, can only be inferred, but he undoubtedly fell from the planks to the ground below, and as the iron stay dropped on him he subsequently died from the injuries. An attempt was made to obtain compensation from the contractors under the Employers' Liability Act, but without success. Then the authority of the Workmen's Compensation Act was invoked, and the County Court judge awarded the widow 240*l.* The Court of Appeal would not approve of the decision, and consequently the case came on appeal before the House of Lords. The final result is that the County Court judge's decision has been approved. It will be seen from the report printed elsewhere that Lord Macnaghten and Lord Lindley took extraordinary pains to arrive at a decision. Both spoke of the loose construction of the Act. As there was a majority of their lordships in favour of the plaintiff, the case must have an influence on many actions which will hereafter be brought. With such a precedent it is no longer necessary to suppose that the construction, repair or demolition of a building, as a whole, can be considered as essential to the Act. In this case the scaffolding was only 8 feet in height, and therefore the 30-feet limit of building could not save the defendants. In the Court of Appeal it was held that the building was not being constructed or repaired. In the House of Lords the addition of iron stays was held to be in the nature of construction. When there is so anomalous a situation, it is impossible to say what class of work will henceforth be held as coming under the Act. Messrs. Newton, Chambers & Co. have rendered a service to builders and contractors of all kinds by their endeavour to have the conditions of the Act restricted to what was originally contemplated. They will have to expend a large sum of money to allow it to be demonstrated that the Act is so indefinite. The risks of loss to contractors in the future will be more inevitable than those which have come before the Courts during the past three years.

According to Johnson "rubbish" means "ruins of a building, fragments of matter used in building." He quotes as an example a sentence from Glanvil's "Scepsis," "A fabric, though high and beautiful, if founded on rubbish, is easily made the triumph of the winds." When Johnson wrote there was no gauge existing to determine the size of broken stones or broken brick. But when "stones and rubbish" are brought together in a sentence, it is not tantamount to writing "stones and dust." According to some etymologists "rubble" and "rubbish" are akin, being allied to the old French word "robel," and that fact would also help to show the word was not used to signify dust. A case was lately tried in the High Court which turned on the meaning of the word "rubbish." It related to the removal of materials from the Highgate Archway, and the rights of the parties would be affected by the meaning of the word. Sir F. Jeune, who heard the case, considered the plaintiff's contention that "rubbish" in the building trade meant "brick rubbish and hard core" was not sustained by the evidence. His lordship believed the evidence showed that the term was used by the trade in the sense of that which was inherently useless, and accordingly there was judgment for the defendant with costs. There was much difference of opinion among the experts who gave evidence, and in practice the word "rubbish" has no doubt various shades of meaning. But when architects specify that brick rubbish is to be laid on ground under concrete or is to be used for filling-in, would his lordship hold that they were liable to damages for employing material that was "inherently useless"? Practical science has been able to utilise so many products that were formerly considered mere waste, it is now difficult to say what is really useless.

The librarian at West Ham, Mr. A. Cotgreave, is an enthusiast for his work, and he has brought out a "Contents-Subjects Index to General and Periodical Literature" (London: Elliot Stock). He has filled a volume of over 700 closely printed pages with the names of books and articles relating to an immense variety of subjects. There is no question that the book is a cheap guide, which within its limits will make the search for information comparatively easy. But it is inevitable that the utility can only be partial. Indeed, a volume equal in size to Mr. Cotgreave's, if produced once a month, would hardly suffice for contemporary literature. There has to be some definite boundary fixed, but the principle adopted by Mr. Cotgreave in his selection is not stated. The labour required in the production of this single volume must have been enormous, and even the omniscient Macaulay would have to own that the pages suggested much that he did not know. The abundance of printed matter in the world is indicated by this one volume, but it would require a patriarchal life to be able to grapple with so much knowledge. While we admit all the good features of the volume it does not display much knowledge of technical literature when we find Mr. Cotgreave sending a student in quest of knowledge about "Early Architecture" to the *Boy's Own Annual*, and for the "History of Buildings" to the *Girl's Own Annual*, and for "Grecian Architecture" to Foster's *Critical Essays*. Mr. Cotgreave has devised mechanical arrangements which have been found useful in conducting the business of a library. Possibly he occasionally employs a machine to compile his Contents Index.

When Sir John Soane said "that he had himself measured for builders by the express advice of Messrs. Dance and Holland, two of the most celebrated architects of their day; that, so far from considering the practice disreputable, he believed measuring to be the stepping-stone to professional knowledge and very frequently the only means by which the young practitioner could obtain a livelihood," he was referring to an early period of his life. He offered no objection to belong to the same society with surveyors, but in his numerous Government works he does not appear to have acted as a measurer or to have charged separate fees for performing that duty. That there is still uncertainty about the practice of quantity taking and measuring is seen in the second trial of the case of Dollar *v.* Higgs and Another, which was heard a few days ago before Mr. Justice Wills. As his lordship distinctly stated that the question of secret commissions could have no application to the case, it can be considered simply as one which involved two views of professional routine. Messrs. Higgs, the builders, paid 262*l.* to Mr. R. S. Wardle, a gentleman who acted as surveyor in connection with stables at Tottenham, for which they were contractors. They stated that they had received no information that he was not an independent surveyor. But Mr. Wardle was acting on behalf of Mr. P. Dollar, the architect for the buildings, and by the agreement between them the former was to receive one-third of the commission for surveyor's work, of which a part had been already performed by other assistants. Accordingly Mr. Dollar brought an action against Messrs. Higgs to recover the 262*l.* Mr. Wardle, it appeared, had his own office, but he was occasionally employed by Mr. Dollar, as in the Tottenham contract. The whole question, then, was, were Messrs. Higgs correct when they supposed Mr. Dollar had no share in the surveying? As the jury found for the plaintiff and gave a verdict for two-thirds of the money claimed (the remaining third being due to Mr. Wardle), they considered that the contractors should have known the circumstances of the case. It seems to be an unfortunate arrangement that builders who possess the experience of the defendants should be left in a position where doubt on the matter could arise, for when the responsibility of a surveyor to a contractor is remembered, the latter ought to be sure of the man on whom he can make his claim.

ROYAL ACADEMY STUDENTS' WORKS.

When the President of the Royal Academy announced the names of the winners of the students' prizes on Monday night, he declared that the collection of work which was in the galleries formed one of the best exhibitions ever displayed. According to Sir Edward Poynter no such drawings from the antique had been seen for some years. At least six of the drawings from life were above the average. The modelling was remarkable, and a study of a draped figure could not probably be surpassed in any school of Europe. Lastly, the competitors for the Creswick Prize had made great efforts, and the winner was run very close. It is a matter of regret that the President, as an architect's son, did not remember there were architectural drawings also to be seen, for a few words of encouragement on such an occasion are often invigorating to students. In the case of architecture they are more demanded than in any other section, for, however excellent may be designs and drawings, they cannot compete in attractiveness with the examples in painting and sculpture.

A foreign critic visiting the galleries on Tuesday would be sure to come to the conclusion that landscape is the most popular of all varieties of art in England. The Great Gallery was assigned to the paintings prepared in competition for the Creswick Prize. As each measured 4 feet 6 inches by 3 feet, and all were enclosed in massive gilt frames, the collection appeared to be removed from students' attempts. Indeed, several of the paintings revealed a skill in treatment which was likely to have been acquired by working for the market. The subject assigned was *A Stream through a Meadow*, and it is unnecessary to say there was much variety in the interpretations. The prize of 30*l.* was won by Mr. Ernest Board, who has been very successful this year. This represents a spot where the stream comes in contact with a large group of water-flags. As the plants are introduced in front, it was found necessary to draw every leaf with care, and the skill in draughtsmanship may have secured the victory. Some trees as well as grass land are seen; there is a rustic bridge over the stream, which is so limpid that the dark-brown bed is visible, and various wooden fences also offer a contrast by means of their rigid lines. The majority of the paintings are typical of this country, but No. 21 is evidently derived from Switzerland. In the background is shown part of a very steep mountain, and in the foreground châlets with red roofs and peasant women appear. Beside it is a painting which is a courageous experiment, for the stream runs from back to front in an almost straight line, dividing the meadow equally. Yellow plants are abundant and there are trees in the background. In No. 1 alone is there a reflection of sunset; bullrushes are introduced near the water, but not with entire success, for the dark heads give an appearance of spottiness. No. 3 is spoiled by the remains of a large barge, which is the most prominent object in the picture. In No. 9 the position of the stream is doubtful. A remarkably crooked apple tree is in the centre, and near it a white horse is grazing. This picture shows the result of admiration for French art. No. 10 must have been one of the pictures to which the President referred, and it is sufficiently perfect to merit a place in the Summer Exhibition. The light and shade, the rough ground, and the general tone of the painting raise it far above the average of students' work. Another skilful and successful effort is marked 14. The stream in No. 16, although at the foot of a hill, is a mere thread of water. No. 28 recalls the old recipes for painting, as there is a distorted brown tree in the foreground. Taken as a whole, the landscapes must be considered excellent. They prove that honest, straightforward work, which seems to be a direct transcript from nature, is in favour with the Academicians. For beginners it is, we suppose, believed that sentiment is out of place, for among so many examples there is not one that is suggestive of the "pathetic fallacy."

The first room is occupied with sixty-one monochrome designs for the Armitage Prize. The subject selected was *Joseph being Sold by his Brothers to the Ishmaelites*. The treatment is in oils, and as the canvases are but 18 inches by 12 inches the composition can be considered as only suggestive. The medal and 30*l.* were awarded to Mr. George Murray. Joseph is seen as a tallish youth kneeling and appealing, while some of his brothers appear to be recommending the new slave to the dealers' consideration. Mr. Board, who won the second prize, shows Joseph as a nude figure lifted from the pit. As a rule, all the competitors treat the subject as an ordinary incident of Eastern life, but the author of No. 25 places Joseph apart on ground which is slightly inclined, and thus gives him the appearance of a victim. In 37 and 21 the camels are well utilised.

There are over sixty examples of painting a head from life. Mr. E. Board obtains the silver medal for a portrait of a girl who wears black lace, the second medal being gained by Miss F. E. Chaplin for a head in profile. The heads form an interesting collection, and are vigorous without being coarse.

To architects the most attractive competition among those for students of painting must always be the design in water-colour or tempera for the decoration of a portion of a public building. This year it is proposed to employ the design in the decoration of the staircase leading to the refreshment-room in the exhibition, in which case the designer is to receive an allowance of 4*l.* a week while employed. The subject was *A Procession of the Hours*, or Horæ. There could be no better subject, because it is elastic. We divide our day into twelve hours, but to a Greek the number of horæ was indefinite, and they might correspond with the seasons of the year. In Athens only two horæ were worshipped, but in other parts of Greece there were three who symbolised Spring, Summer and Autumn. The horæ played so many parts, a great many pictures could be produced as representations of them. One of the conditions of the competition is that besides the water-colour designs there is to be a full-sized drawing of one of the figures or groups. This year Miss F. E. Chaplin has won the 40*l.* prize. The figures appear to be more indicative of months than of hours. A winged Cupid rises to the central figure, and there seems to be general approval among the figures adjoining of his preference. One of the horæ, possibly December or Winter, is not as happy as the others, and is being thrust out. There is something mysterious about the action of the group which increases its interest, although not altogether in keeping with wall decoration. In another design children are introduced among the representatives. In 127 Time is depicted as a young man, there are also children blowing bubbles, and at the end of the procession there are sad-eyed figures accompanied by an owl. The design needs no interpreter and so has an advantage over the one selected. In 128 there appear to be only eight figures, and they are not connected. In 129 the figures form three groups, in each of which one colour predominates, viz. green, red and purple. In 130 Time is the centre figure; he is shown as an old man in dark robes, which stand out well against the golden sun behind him; there are six horæ on each side. The horæ are children in 131. The one following suggests the effect of Early Renaissance inspiration, for the figures are animated rather than statuesque, and wear fluttering robes; palace-topped hills form the background, recalling early Italian works. About the difficulty of undertaking such designs there can be no question, and it is a matter of regret that so brief a period was allowed to the public to see efforts which only need encouragement in order to add new interest to British painting.

The life-sized draped figure of a *Roman Senator Seated*, by Mr. F. Appleyard, is a masterly cartoon. The marble chair on which he is seated would serve as a *bisellium*, but the vacant part is occupied by his toga; by this arrangement the artist avoids the usual stiffness of the pose. The figure seems more vigorous from the vicinity of the paintings of the old familiar faces and figures in the absurd fancy dresses on the other walls of the gallery.

In sculpture the subject selected for the prize of 30*l.* was *Samson being bound by the Philistines*. The competition corresponds with the Armitage Prize, and is carried out under similar conditions, one being that the subject is unknown until the first day of the competition. The successful student this year is Mr. Alexander J. Leslie. There is less bluster in the struggle as he represents it, and Samson retains his dignity although powerless. Another peculiarity of the grouping is the introduction of Delilah, by which a marked contrast between the figures is obtained. Mr. Pibworth in his group also expresses the situation with simplicity. In the competition for a set of four models of a figure from the life Mr. S. N. Babb is first and Mr. C. J. B. Pibworth second, but the difference in value between the two sets is very slight. Although three works are shown in a competition for figure in ornament, a prize was not awarded.

Mr. Henry Tanner has won the travelling studentship to the value of 60*l.* in the Architectural Section for *A Portion of a Street Front.* The length given is 120 feet, and as the street is supposed to be 100 feet wide, the height was to be as much as the Building Act permits. It was stipulated that the designs were to include four shop-fronts and a side entrance leading to suites of flats above. The competition is to some extent analogous to that for the Strand Improvement. The successful design is not commonplace; right lines and curved lines are arranged with a sense of measure. The central and end portions slightly project. The mezzanine floor, which is carried across the building over the shops, has at each extremity a large semicircular window, and the intervening windows, which are of ordinary size, have small semicircular heads. The fenestration is excellent, imparting variety without detracting from the unity of the composition. In the design numbered 186 the shops on the ground-floor are marked by the modern system of varying curves. The gables may be described as truncated triangles, and the window-heads of the upper storeys are surmounted by an arrangement resembling the heraldic water-budget, rather than the usual *aileron.* The design for a bishop's tomb well deserved the prize of 10*l.* awarded to Mr. J. B. Fulton. It suggests the influence of Michel Angelo or Alfred Stevens. But when an arch forms part of a structure we almost instinctively consider it is the main element of support, and on that account the design would have been more expressive if the moulded arch over the recumbent prelate had been deeper. The church of St. Mary Woolnoth, which was designed by Hawksmoor, has peculiar interest since a railway station was constructed beneath it. Mr. A. C. Bossom has obtained a silver medal for a plan and two sections on a quarter-inch scale. The church has almost an excess of detail, but all is represented with great care. The sections show that Counsel did not exaggerate when before the arbitrator he said that the engineering by which the church had been preserved was marvellous; it entailed an expenditure of over 40,000*l.* The Upper School Prize of 25*l.* for design went to Mr. B. H. Webb, and Mr. J. H. Rutherford carried off the prize for a plan of a bank, showing principal office and manager's residence on first floor. A very interesting subject was found for a perspective drawing in outline in three bays of the front of Whitehall, taken at an angle of 60 deg. from the centre; a second drawing had to show how the result was obtained; there was also to be a drawing of sciography, showing the effect of a lighted candle on a table in a room. Mr. Geo. Thow Smith was successful, and his drawings realise the conditions.

It is inevitable that every year the shortcomings of the Royal Academy must be discussed, and it may be overemphasised. But it must be allowed that in endeavouring to educate artists to succeed them the Academicians are acting most unselfishly. It is not their fault if they have not always students of genius to instruct, for it is well known that the most successful students in the schools do not always keep the foremost places when the competition is for the favour of the public. But when all things are taken into account, the education imparted in the Academy is of a character which, if properly utilised, can lead to a position honourable to the holder and useful to the country.

The Old Parish Church of Tregaer, near Raglan, Monmouthshire, was reopened last week by the Bishop of Llandaff. It is a fourteenth-century structure, and is noted for its old half-timbered porch, which is well worth a visit. The chancel arch is also of a most unusual character, taking the form of a cinquefoil above a pointed arch. The reparation has been carried out with a careful hand, the new pulpit being the only innovation. It is contemplated to restore the old churchyard cross, of which the steps and part of the shaft remain.

IN 1834.

PRIOR to 1834 it could easily be concluded, from the scanty notices of anything relating to architecture which appeared in English journals, that the art was of no importance. If it became necessary to refer to the arts, painting generally monopolised the greater part of the space devoted to the subject, sculpture having whatever remained. Occasionally a paper relating to ancient buildings was read before one of the learned societies, but the reports in the public journals were usually so much abridged that knowledge was not much increased by them. We could refer to many cases where the title of the paper was supposed to be sufficient to gratify general curiosity. By slow degrees the importance of architectural subjects was admitted, but the lines allowed to them were so few, it was evident they were grudgingly given. One of the causes of the indifference to the art arose out of the exaction by which a duty was levied on any announcement which could be interpreted to be an advertisement. Many people will now say there can be little difference between past and present in the arts of construction, and it is not, therefore, difficult to assume what was done at any time in England, especially if we take the conditions of practice in our own time as a standard. But that method of reasoning can be only partial. There are many temporary circumstances which affect work in each age, and as the recollection of them is generally fleeting, when they are absent or forgotten we seem to have a different condition of affairs from those with which we may have to deal every day, although in reality the resemblance is near. This will be more apparent, perhaps, after reading the items which we have derived from various records of the year 1834.

There was an Architectural Society in those days with offices in Lincoln's Inn Fields, but it was considered to be too comprehensive. Out of the dissatisfaction the Institute of Architects arose. The projectors were busy in negotiations in 1834, as will be evident from the following paragraph :—"We may, we believe, now announce that an Institution of British Architects is about to be formed ; the plan is, indeed, so far matured and so many influential professional men have enrolled their names as members, that we should perhaps be justified in stating that the Institution is formed. The object is for the cultivation and improvement of architecture, both in theory and practice, and the upholding the character of its professors. As a means of attaining these objects it is proposed 'to form a library of works of every kind connected with architecture; to form a museum of antiquities, models, casts, specimens of the various materials used in building, and of all objects tending to illustrate the arts and sciences in their application to design and construction; to provide the means of performing experiments upon the nature and properties of materials and upon their constructive arrangement; to have periodical meetings of the members for the purpose of discussion and improvement by lecture, essay, or illustration.'" It was then anticipated that the Government would afford the members a place for holding meetings and depositing the collections, but apparently the Institute was not considered to correspond with the societies that were gratuitously housed. When the Institute first met in the following year it was in hired rooms.

It is satisfactory to learn that a society which in principle resembled the Architectural Association then existed. The rooms were in Exeter Hall, and the members, who were all young, it was stated, "contemplate the establishment of an architectural college after the manner of those in Germany." The profession was to lose one eminent teacher. Sir John Soane was professor of architecture in the Royal Academy in 1834, and his services in that office, which he held from 1806, must have been appreciated, for it was resolved to have a medal struck as a memorial of his eminent services to architecture by his personal example, the precepts he gave in his lectures and his generous zeal in presenting the nation with his splendid museum. Although Soane ceased to teach he lived in his house in Lincoln's Inn Fields until 1837. Charles Barry, although he was not to be a professor of architecture in the Academy, was succeeding to varieties of practice with which Soane was concerned. In 1834 he possessed the experience which was derived from twelve years' work, and two years before he had proved his refinement by the completion of the

Travellers' Club. Barry was then engaged on a most difficult work, viz. the transformation of Trentham Hall, the seat of the Duke of Sutherland, and the surrounding grounds. Among the innovations was the largest architectural garden in England. He was also commissioned to design the Grammar School in Birmingham. C. R. Cockerell, who was seven years older than Barry, and moreover enjoyed the advantage of an earlier introduction to an influential circle where his advancement was facilitated, would at the time appear to have a monopoly of the best commissions awaiting him, but his own fastidiousness was subsequently an obstacle to his success in the business of his profession. Pugin, who was to be associated with Barry, was in his twenty-second year, and was then preparing himself for the attack on the church building of the time, which inspired his "Contrasts," and at the same time acquired that knowledge of detail which was afterwards exhibited in so many forms.

Philip Hardwick was engaged on dock warehouses, and was afterwards to demonstrate that architectural art could impart dignity to railway buildings. Sir Robert Smirke was the busiest architect of the time, and was then occupied with the long range of buildings forming King's College, which so often is taken to be Chambers's work. Tite, like Smirke, was connected with railway works, and he had a special department in commercial buildings. London in those days was circumscribed if compared with its present area, but it afforded enough opportunities for the display of ability, and many of the buildings which must now be considered as characteristic of it date from the years between 1830 and 1840. Architecture was also becoming more defined as a profession. In the preceding generation "architect and surveyor" described the duality of the general practice. There were many excellent architects in 1834 who would not object to be described as surveyors, but, as we have said, ideas were arising which separated the two callings, and it was advantageous that so many men were able to find occupation for exceptional ability and energy in attending to architecture alone, and leaving surveying to others.

Among the buildings of 1834 may be mentioned the Hungerford New Market and the Tothill Fields Prison, of both of which no trace remains. The latter was designed by Robert Abraham. In it the system of independent contracts was carried almost to excess. For instance, the outer gate was constructed by one firm and the inside gate by another. The architect of Hungerford Market was Charles Fowler. The drawings seem almost like an anticipation of those required for the Strand Improvement. There were many shops with galleries supported by Doric columns. Granite was mainly used for masonry. This large work was completed in a couple of years, and it was expected to supply western London with meat, fish and vegetables. It seems now incredible that part of the site was appropriated to a hay market. When the Houses of Parliament were destroyed by fire in October the neighbourhood of the market at Charing Cross was suggested by some as the most eligible site for them, but old traditions prevailed. In spite of all the opposition to Wilkins's design, the building of the National Gallery was commenced in 1834 by Messrs. Harrison, the contractors. Brick was used in the foundations. It may not be generally known that it was proposed at first to have the front more to the south, but owing to the opposition shown on account of interference with the portico of St. Martin's Church the present line was adopted.

There was no society for the preservation of ancient buildings in 1834. No one need therefore be surprised to find a suggestion in the *Times* of the demolition of St. James's Palace, in order that a grand entrance might be made to St. James's Park, but sentiment and authority could not be overcome. The most remarkable project of 1834 was one which did not relate to this country. In 1832 the independence of Greece was recognised and Prince Otho of Bavaria was selected to be king. Athens was then in a strange condition. Accordingly, some rich Greeks purchased land to an immense extent in the island of Eubœa. It was decided to create a new Athens there, which could accommodate 80,000 inhabitants. An architect named Kleanthes was commissioned to prepare the plans, and he proposed, regardless of the self-sacrifice on his part, to have all the public places constructed in imitation of those which were most admired in different cities of Europe. The project was not successful. It was considered that the architect was disposed to be over-favourable to some of the occupiers, and the suspicion was enough to cause his removal. Then Leo von Klenze was sent from Germany to give advice upon the undertaking. It is needless to say a new Athens was not created. There are, however, many English residents who are glad to utilise the fertility of the island of Eubœa, and there is a new Eretria near Chalcis (Negropont), but Athens remains still the capital of modern Greece. The proposal is a remarkable comment on the indifference which financiers have for antiquity. Whether the contemplated capital would have succeeded better than Athens as a place of residence is a question about which there will be much difference of opinion.

Among the inventions of the year was a glass tile, by M. Dorlodot, of Anzin. It was supposed to be applicable for skylights and other purposes, but owing to the Excise laws its use was impossible in Great Britain.

Artificial stone was in its infancy, for when Ranger employed his composition in 1834 at Woolwich it was considered a novelty which was ultimately to supersede bricks and stone. He had already, however, erected a church with the material as walling for the Duke of Northumberland, a house in Regent's Park, a guard-house in Birdcage Walk and other structures. Another variety manufactured by Mr. Austin was at the time much employed for fountains and architectural ornaments, and examples may still be found to show the endurance of chemical mixtures. Imitation of German practice was not then popular, otherwise we might have had cast-iron employed almost generally in English buildings. In Berlin iron joists were being used for supporting floors, cast-iron abutments were preferred for brick arches, and roofs were covered with iron plates.

A pamphlet was published in 1834 by S. Smirke which suggested several London improvements. Among them were a street from Cockspur Street to Covent Garden, one from Oxford Street to Holborn, and one from the Strand to Holborn along the eastern side of Lincoln's Inn. It was also proposed that villages for the poor who would have to be evicted to make room for the improvements should be formed near Vauxhall Bridge, Euston Square and the Edgware Road, where space was obtainable in those days.

EXAMINATIONS FOR ARCHITECTS.*

In opening the question of examinations for architects, I do so with some hesitation, because it is a subject which has claimed the careful attention of truly eminent and learned members of the profession of architecture for many years. Since the time I began studying for architecture until the present time, I have been longing for an opportunity of disseminating my ideas on this subject. That progressive body of the profession, the Society of Architects, have honoured me by allowing me to read this paper, and by so doing to create, I hope, a lively discussion upon this important question. I love my profession, and it is my wish to see it advance; it will therefore give me the greatest pleasure to have every point of this paper criticised most thoroughly in order that a result may be obtained which shall be of universal value to architecture, present and future.

Training.—The training of an architect's pupil, if carried out in the orthodox style, is somewhat as follows, varying slightly according to circumstances.

Pupil Days.—On entering the office he practises office routine, such as copying specifications, quantities and builders' accounts, tracing or copying drawings made by the draughtsmen of the office, and in spare time copying examples of well-known works, measuring up old buildings, studying building construction and sometimes geometry and perspective, reading history of architecture and endeavouring to learn dates relating to the same. Occasionally he will attend art classes and science lectures in connection with the School of Science and Art if in the provinces, or if in London he will attend King's, the Architectural Association classes, or other technical classes, and various private preparation classes.

Thus, if the student wishes to excel in the examinations instituted all over the world for the advance of his art, he must work diligently upon the works of other men, both in buildings and in writings, leaving no time for improving himself in any original ideas that he may be possessed of. He is induced to enter a competition for a scholarship or for a building; and how well he knows that if he does not adopt the particular style in fashion, he stands no chance of success. For instance, what assessor will now look at Gothic work?

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* A paper read before the Society of Architects by Mr. W. Cooper, hon. corr. sec., on December 13.

It is needless to say that such a process of education stamps out for all time any chance of the subject working in an original way; because usually his time for working out original problems has passed when he commences working in earnest professionally. Yet this is the course of study which must be adopted if a man wishes to pass an examination to qualify as a member of any society of architects of standing, and I must include in this even the Society of Architects.

It is essential that an architect should have an artistic mind; he should also be a constructor, he should be trained in business matters, he should have a very thorough, practical knowledge of materials and their uses, and be up to date in sanitary matters.

Art and Style.—In design absolute freedom should be allowed to the candidates. Style should be ignored and many marks awarded for good proportion and consistent originality; this will save some very precious time in preparation and anxious and worrying months comparing differences of style, periods of architecture and details of ornament relating to the same; it will also induce a freedom not yet attained by latter-day architects. Study of former examples is well in its way, but it should be confined to the archæologist. Why go back? If progress is required the motto must be, "Forward."

Some will say, "Who is to judge the artistic merit of the design, or the good proportion of the features composing it?" The reply to this is, "Who shall judge the value of a picture?" or any other work of art, as a grouping and finishing of a design in sculpture.

Very few marks should be given for neat draughtmanship. It is a great tax upon some art men to make finished geometrical drawings, and has the effect of cramping the hand and injuring the eye for drawing freely.

A good knowledge of freehand drawing, shading and perspective is imperative; sufficient value is not given to these subjects, although they are all important to the art architect.

Construction and Materials.—Unfortunately the gift of art and science is not usually very fully developed in one brain; consequently our most artistic men are bad constructors, and good constructors are invariably bad designers.

Time can well be saved by requiring only a knowledge of the books in which to find formulæ for calculating strains and stresses, and other things (which are now required to be committed to memory), and how to work them out. The candidate should therefore be allowed to have books of reference, such as architects have in their offices, but the questions should be such that the test of the study of the books is very thorough, so far as the means of finding out matter necessary to correct construction is concerned.

The anatomy of the building must be known, for as the sculptor and a painter is better qualified by knowledge of the anatomy of the subject he carves or paints, so an architect must be more proficient the more he knows of the general principles of construction. The examinations in this should be very searching.

Usually there is too much theory and not enough practical knowledge required of the candidate.

Foundations, and how to deal with any formations upon which a structure is to be built, should be one of the compulsory questions.

Materials.—In this paper the candidate should show a knowledge of the names and addresses of well-known experts and testers of all classes of building materials, how all kinds of building materials are employed, and the reason why they are used for particular purposes; he should know the colour and distinguishing features of the various stones and woods.

Some rough-and-ready practical tests of the materials, such as bricks, stone, cements, lime, timber and artificial preparations, but most important of all a thorough acquaintance, by sight, of the actual materials, samples of which should be in the examination-room.

To the artistic mind, committing matter to memory is usually tedious and aggravating to a degree, but to remember by sight is comparatively easy.

The Contract.—A copy of this should be placed before the candidate, and it should be required of him to explain any portions of it. What is the use of committing it to memory, as is required by most examining bodies?

Prices.—A schedule of prices should be given, upon which to base the estimate of works or of the contractor's bill of extras. Values vary so frequently, and rise and fall so rapidly, they also vary in different centres so much, that it is impossible to have a thorough knowledge of them at any time.

Quantities.—A certain knowledge of quantities is necessary, both in the method of taking them off, abstracting and billing, but few marks should be given for this, because an architect is not necessarily a quantity surveyor, but it is required of an architect to be able to check measurements and to measure his own work.

Land Surveying and Levelling.—This is wanted in a limited degree, and no examination is complete without questions upon it, because every architect who has to live by his profession with a small practice has problems in land measuring, and it is necessary to his success that he should know how to do it, at any rate until he can afford to keep or employ a land surveyor to set out the plan and levels of the land he proposes to develop.

Specifications.—A thorough knowledge of specifications is essential, and the candidate should be required to write a specification governing every part of his design, with the assistance of a skeleton specification to work upon.

Sanitary.—The general laws laid down by sanitary experts should be known by memory, both for a building in the country and in a town; he should know how to test drains and to check the deception practised by the contractors. For weights of pipe, and like subjects, books of reference might be allowed.

Decoration.—Without the qualification to blend colour many an otherwise good building will be ruined. Decoration should therefore have strict attention and rigid examination.

Time for the Examination.—Two weeks, at least, is necessary to do justice to the subject. Some are much slower in their work than others; ample time should therefore be given, so that the slow and thorough should have the same opportunity as the quick.

I have endeavoured to show by this paper that I would expunge from the examinations all unnecessary questions, such as, "Where does olive oil come from?" "Who was Xenophon?" geography, languages (except English), mathematics (beyond that portion required in an architect's practice), dilapidations, chemistry of materials, history, and all other subjects unnecessary to the uplifting of architecture in the true sense of the word.

We are living in an age of construction unlike any that the world has ever before experienced. I mean steel construction. Yet there has not been a successful attempt to apply it architecturally. Why is it so? Because architects of the present generation are trained to slavishly copy and study the works of architects in stone and wood.

Under the present system of tests, the man who has the best memory holds the best position in the examination. It should be the man who answers the most practical questions best who should be given the first place.

I have only touched lightly upon the subject in order to give points upon which a discussion can be carried on, and I sincerely trust that drastic reformation will be the result.

THE HOUSING PROBLEM.

IN his address as president of the Northern Architectural Association, Mr. William Glover referred to the erection of dwellings for the poorer classes, and said:—

The housing of the poor has become a most important question, and is occupying the attention of our imperial and municipal councils. There is a great diversity of opinion as to the best means of meeting this want. The general principle hitherto adopted has been to erect blocks of buildings many storeys in height and divided into compartments. Of course, in large cities where the ground is very costly this is practically the only course open; but during the last twenty-five years workmen's trains, trams and steamboats have brought the suburbs of our cities in closer contact with our manufacturing centres.

In my opinion the speculative builder has been the most important agent in providing suitable houses for our poor. During that period, within three miles radius of Newcastle, 2,492 acres have been laid out for building purposes, on about two-thirds of which the following houses have been erected:—109 detached villas, 209 semi-detached villas, 1,960 superior self-contained, 1,184 superior flats, 3,547 workmen's self-contained, 12,788 workmen's flats, and at the present time 557 workmen's flats are in course of erection. Although my chief object was to bring before you the housing of the poor only, yet I thought it would also be interesting to you to have some information as to the middle-class residences that have been erected. I think it is important to carefully watch the separation of the different classes of flats, so that smaller flats are not mixed up with superior ones.

I would divide them into classes as follows:—(1) A flat of 20 ft. by 55 ft., without gardens in front. (2) A flat of 21 ft. by 60 ft., with a bay window on the ground floor and 5 ft. garden. (3) A flat of 22 ft. by 65 ft., with say an 8 ft. garden in front, bay windows on the ground and first floors, each class to be erected on different portions of the estate to meet the requirements of the different types of workmen. I think it is most important that all flats should not have less than three rooms, so that the sexes can be separated. This would not only be conducive to the health but also to the moral tone of the occupants. I have had experience in estate development, and have had to do with the speculative builder. A very large proportion of the builders I have met have been anxious to build sound property; the difficulty has been for those who have honestly carried out their work to get a price to compensate them for the superior quality. In former times a good deal of shoddy work was done which brought the speculative builder into bad repute, but in a great measure owing to the careful supervision of our city engineer and his staff, a different state of things now prevails. It is now usual for architects to embody in their contracts for sale of land a specification wherein the size and height of rooms are carefully watched, and the sanitary arrangements are carefully thought out. All living and sleeping rooms to have 14-inch walls, and proper yard areas are to be provided. In my opinion it is better to leave the housing of our workmen in the hands of the speculative builder than for corporations to erect gigantic structures which have not the healthy surroundings or domestic comfort of suburban houses; every effort should be made to educate our industrial classes to seek for and secure a comfortable home, and to make the same their leading luxury, and inculcate within them a spirit of self-reliance which is, or should be, the backbone of the English character.

The herding together in one or two rooms is a fatal mistake, both morally and physically. I would encourage the speculative builder by giving him an advantage over others; for example, if a single site is sold at 6*s.* per yard, if he will take six sites I would let him have them at 5*s.* 6*d*, which, on an area of 150 yards, gives him a profit or discount of 3*l.* 15*s.* 0*d.* per site.

This would not entail much loss on the owner, inasmuch as the builder would urge on the completion of the six houses in the specified time. It is also important that the system of advances should be as liberal as possible, and at a reasonable cost for solicitors and architects' charges.

Building and co-operative societies have done good service in helping their members to secure houses by reducing cost, liberal advance, and facilities in paying off.

There is no sounder investment for a workman's savings than by reducing his interest on the advance, and thus eventually paying off and calling the house his own, which becomes a good old-age pension, far better than pauperising by the Government grant.

This will help to locate our workmen, and influence them in showing that they are so valuable to their employers that they will not part with them.

If corporations owning large areas of land, and private individuals who are putting land into the market for building purposes, would assist by selling it at a price that would induce speculators to take it up, I feel that the supply could be kept quite ahead of the demand. For instance, land let for agricultural purposes seldom exceeds 5*l.* per acre, but as soon as it is brought into the market for building purposes it is lifted enormously in value—if near a town, to about 1,000*l.* per acre, which at 4 per cent. means 40*l.* per acre, practically 4*s.* per yard; the area given up for roads is about one-third, and this increases the cost of the net building area to about 6*s.* per yard, which is not above the average; but if it could be sold for less it would very much facilitate sales, and sites with a larger area would be more ready saleable; that is, instead of building a flat on 20 feet by 55 feet, make them 22 feet by 65 feet and reduce the area of roads in proportion to the sale of land. To reduce the cost of the workman's house the question of avenues, instead of front streets, should be seriously considered, as instead of paying 12*s.* per foot frontage for road making, it would only involve about 2*s.* 6*d.* to 3*s.*

If front streets are adopted, I would strongly urge the doing away with back streets, which cost from 8*s.* to 10*s.* per foot besides the continual cost of wear, tear and scavenging.

I do not suggest that the area of the houses should be increased, or that the land given up as back street should be built upon, but that the space should be devoted to garden purposes. I have had some experience with estates in the suburbs of London upon which workmen's dwellings have been erected, on not one of which is there a back street, and yet London is one of the most healthy cities in the Empire. There is an extraordinary by-law in connection with the Benwell and Fenham Urban District Council, which compels a 24 feet back street with a 36 feet front street, whereas the by-laws in Newcastle insist upon a 40 feet front street and 20 feet back street, which is superior.

The allotment system is, I consider, a step in the right direction. If an allotment could be secured in close proximity to the house of an artisan, it would add materially to his comforts and convenience. This might be accomplished, if the price of land was reduced, by making the site 120 feet instead of 60 feet in depth, which, on a 21 feet site, would give him about 150 yards of garden ground or open space.

Take the Corporation land at Walker. During the last twenty years there have been sold on lease about 15 acres, on which 394 houses have been erected, or about twenty-six houses per acre. At the present time there are about 62 acres laid out for building purposes, and this, on the basis of the twenty-six sites per acre, would give over 1,600 sites, and if built in flats would give 3,200 separate dwellings, and this, taking the average family to number five, would give accommodation for 16,000 persons. Now, though it is a well-known fact that Newcastle speculators find that freehold property finds a very much more ready sale than leasehold, there being no depreciation of lease or annual payment to frighten the purchasers, I think that, assuming this land cannot be enfranchised, something might be done in the way of selling on a perpetual annual ground rent, say, based on 1,000*l.* per acre at 5 per cent., which would equal 50*l.* per acre per annum, or taking twenty-six sites per acre at an annual ground rent of 2*l.* per site, would give a return of 52*l.* per acre per annum, and thus get over the difficulty of depreciation of lease, and a ground rent of 10*s.* per quarter would not be a very serious charge. During the last fifteen years the cost of a workman's dwelling has been considerably increased owing to the shorter hours of labour and increased wages, and, what is more serious, the same amount of work is not produced in the given time. Several contractors have informed me that the bricklayer at one time laid from 800 to 1,000 bricks per day, and, to quote a remark made by one of our largest contractors, "they would not perspire to do it." Now they seldom exceed 400; and when we consider there are in the workman's flat between 32,000 to 40,000 bricks, masonry for windows—heads and sills are now about double what they were fifteen years since—it is obvious there is a great increase in the cost of such building—in fact, it and other trades affect the cost from 25 to 30 per cent. at least. A flat that fifteen years ago could be erected for 240*l.* now costs about 320*l.*

One of our leading speculative builders has furnished me with the following particulars showing the difference in the net cost, for labour only, in the several trades named, for a superior flat, of which the total net cost was, in 1890, 372*l.* and in 1900 505*l.*:—Bricklayer (labour only) in 1890, 24*l.*; in 1900, 42*l.* Joiner (labour only) in 1890, 48*l.*; in 1900, 65*l.* Mason (labour only) in 1890, 20*l.*; in 1900, 28*l.* Plasterer (labour only) in 1890, 14*l.*; in 1900, 25*l.*

The rent of the workman's house has increased by the free education and School Board rate. I remember some few years ago valuing some tenemented property, and then I asked the lady occupier what she paid per week. She informed me that she had formerly paid 5*s.* per week, but owing to the School Board rate she was then paying 5*s.* 6*d.* She did not object to this as she had three children, and instead of paying 1*s.* 6*d.* per week for their education it now cost her only 6*d.*, which showed that the lady was well up in domestic economy—a matter, I fear, which is much neglected at the present time.

ROYAL INSTITUTE OF ARCHITECTS OF IRELAND.

THE annual meeting of the Royal Institute of the Architects of Ireland was held on the 6th inst. in the offices, 20 Lincoln Place. Sir Thomas Drew, R.H.A., F.R.I.B.A., president of the Institute, occupied the chair.

Amongst those present were:—J. R. Carroll, F.R.I.B.A.; C. A. Owen, F.R.I.B.A.; C. J. M'Carthy, W. M. Mitchell, J. H. Webb, F. Hayes, J. F. Delany, Joseph Holloway, W. Kaye Parry, G. L. O'Connor, Robert Cochrane, F.R.I.B.A.; R. Caulfeild Orpen, M. J. Tighe, C. Geoghegan, T. Coleman, Harry Auberry, J. P. Wrenn, F. Batchelor, F. G. Hicks, R. M. Butler.

A letter was received from Mr. W. J. Gillen in reference to the formation of an allied branch of the Institute in Belfast, where the condition of the architects was not in a satisfactory state.

Mr. W. G. Doolin wrote a letter stating that as no notice had been taken of his former protests he did not intend to take any further part in their proceedings until the by-laws were properly amended.

The annual report of the Council stated:—

The number of names on our roll remains about the same as last year. The attention of the Council was directed early in this year to legislation in connection with local government in Ireland. A representation was made to the officials of the Irish Government that in the Local Government Amendment Bill provision should be made that all persons appointed by county, urban or district councils as architects, engineers or clerks of works should be duly qualified for their respective undertakings. The late Chief Secretary replied to such communication that we "should bring before him instances in which improper appointments of this kind were made." We may notice the irrelevancy of such a request, but it was the obvious duty of the upholders of the Act to secure efficiency of public service when pointed out, and in disregard of the experience that there was a tendency in rural councils to make appointments of persons entirely untrained and unqualified for expert service, involving waste of public funds and maladministration of public duties. The instances before the Local Government Board, as conveyed by reports of the public Press of the earliest working of the Act, should have been noted by it as sufficient. The Queen's visit to Dublin in April, which aroused enthusiastic loyalty throughout Ireland, had some special interest for the Institute. In the hurried preparation for the scenic reception of Her Majesty, an appeal from the Lord Mayor of Dublin was cordially responded to by leading members of the Institute, and their advice welcomed by the citizens' reception committee and the Lord Mayor. It is of universal record that the capital of Ireland had never been seen to such advantage, and that the decoration of the streets and public buildings for an historic event was not only lavish in extent, but, on the whole, in remarkably good taste and judgment. It makes a precedent for the controlling influence of the architect (as exercised in ancient times of pageantry) over the operations of the modern contractor for city embellishment on such occasions of State. Especially the now famous reception of Her Majesty by the Municipality of Dublin and delivery of the city keys at Leeson Street Bridge, owed its chief dignity to the architectural influence. The improvised revival of an ancient city gate of Dublin, a structure over 90 feet high, was designed by our president, Sir Thomas Drew, and erected with spirit by Dublin contractors within eight days. It was distinctly a presentment of ancient architecture for the occasion, such as only an architect could have produced, and was a principal feature in the mise-en-scène of an historic State pageant such as perhaps has not been enacted with more dignity, impressiveness and picturesqueness since Mediæval times. The Council cannot but record with gratification a Royal recognition of architecture, and especially in Ireland, by the distinction of knighthood conferred on the President "for public services in the advancement of architecture in Ireland." It is still more gratifying to have learnt that such a distinction was designed and offered as complimentary to the profession in the kingdom at large, and the spirit in which it was conferred has been so accepted by the Council of the Royal Institute of British Architects in a resolution couched in generous terms. It is known also by communications from architects in other parts of the kingdom that the selection of our president as a representative architect has been well received by the profession everywhere. It has been a traditional grievance that architecture has in the Royal Academies of England, Ireland and Scotland not been accorded its fraternal equality. It is a satisfaction to the members of this Institute that their president, Sir Thomas Drew, has been called to the presidency of the Royal Hibernian Academy at the beginning of a new century, with the cordial consent of brother artists that an architect may have the privilege to preside in an Academy of Arts. The subject of building contracts has been pressed on the attention of the Council during the past year. The movement for reform in building contracts is a general one, spreading from the organisation of master builders in London to provincial ones. The Council conceives that general conditions of contract, approved by the Royal Institute of British Architects, framed under most eminent legal advice, and about to be communicated to this Institute as an allied society, should be the basis for reformed conditions of contract, and that uniformity of usage throughout the kingdom, so far as possible, would strengthen the legal position of the builder especially. The Council decided on offering a prize this year of 10*l.*, open to members of the Architectural Association of Ireland. The subject of design selected was a small town hall, suitable for an urban council of 10,000 inhabitants. We regret that only three competitors responded. The designs displayed considerable merit, but with the exception of one were of too ambitious a character. To this one was awarded the prize, in consideration of its observance of the conditions. The Council have resolved to offer a like prize for next year. The Council this year exercised its right of nomination of a Fellow of the R.I.B.A. in the person of Mr. Vincent Craig, of Belfast, who was accepted for Fellowship.

Mr. Carroll proposed the adoption of the report. The Queen's visit showed the importance it was to a city like Dublin to have an institution such as theirs, ready to be called upon in an emergency for the adornment of the city. They were all delighted at the honour which had been conferred upon their President.

Mr. W. Kaye Parry seconded the motion. He said that he had sent out many letters to country members asking for information in connection with the appointment of architects, &c., by the local district councils, so as to enable them to lay a case before the Chief Secretary, but no reply had been received. He trusted that information on this matter would be forthcoming.

The ballot for the election of members on the Council resulted in the return of Messrs. Ashlin, Batchelor, Carroll, Geoghegan, M'Carthy, Mitchell, Murray, Orpen and Sheridan.

The President then delivered his annual address. He said :—Since I last had the privilege of addressing you at an annual meeting it has become unnecessary for me to inform you that Her Gracious Majesty the Queen has, through her Viceroy in Ireland, offered a compliment to architects, and especially to Irish architects, in a distinction which is, I believe, at present conferred on no other practising architect in the kingdom. It is in no sense a personal one. It is strictly an impersonal recognition of the art of architecture in a gracious act directed to the Royal Institute of Architects in Ireland. It was much to my surprise that I learned, with an offer of knighthood to me as your President, that such a compliment had been for some time under consideration, and that the happy occasion of Her Majesty's visit to Ireland, and with it an outburst of kindly enthusiasm about Ireland, pointed to a time to select an Irish architect when goodwill to Ireland was everywhere in the air. That I should be the unworthy individual foremost to bear an honour offered under such strangely fortuitous circumstances is due to what I value more than any such honour—that persistent regard—I may say, in truth, that personal affection—of my brethren which has kept me in this chair as their President for a long term of years. It was particularly agreeable to me that the first communication following this honour was a telegram from the R.I.B.A. of "warmest congratulations." It was followed by a resolution under the seal of the British Institute, the generous spirit of which needs no comment. Having disposed of this subject I propose to make my special address on this last occasion, when I can rejoice in speaking with authority, on the subject of insularity and the effacement of the Irish architect and to lecture my brethren. It is delicate ground, perhaps, to touch on, but the situation is one to be plainly debated. In the rapid changes of universal society (on which I have dwelt as affecting our fraternity with architects at large) I feel bound to notice that this development has brought an increasing number of architects who are not of Ireland to practise in our midst. It would be an invidious thing to make a list of the architects from across Channel who in the past two or three years have been called to lend variety to a perhaps too insular school of architecture. I am bound to say I have not heard from a single member of our Institute a murmur of discontent at the new migratory excursion of the cross-Channel architect in force of numbers. The fair and courteous professional feeling among us is summed up in the saying that "he who pays the piper should call the tune," and, indeed, call the piper too. The fact, however, remains that an expenditure on many architectural works which need not be particularised must in the aggregate be estimated at a very large amount, and has not been under the service of architects of Dublin or Ireland. The causes of this migration habit are worth consideration. Some strange sheep, no doubt, enter our fold by the fair path of competition, but beyond this it seems due in a measure to the administration of the departments of State, civil and military, which shows antipathy to employment in public buildings of any but departmental architectural officials. There is also the new development of employment of outside capital in buildings in Dublin under operations of the syndicate system, and by companies having their headquarters in London or other large places. There is also a certain fashion, indicated by the appearance of very admirable works among us, to introduce the work of eminent English architects into Ireland. Who is to say that this may not be for the ultimate advantage of architecture in Ireland, and the making of its future history? Let us remember that the making of a past history of Dublin architecture, of which we are proud, was not that of native architects, but almost exclusively of the imported foreigner. Our policy, if we would turn back the tide of friendly invasion, would be to play at returns, and put Irish architects more in evidence in the general affairs of the profession of the kingdom at large. The Irish architect fails to exhibit his interest and critical faculty in works of Imperial concern. He is not ambitious in communicating his works by published illustration or by exhibition to an outside world; and, while the literature of architecture is every day increasingly enriched by authorship of architects in publications, the Irish architect (with no lack of sufficient ability among us) does nothing to add to the store, or advertise the scholarship in architecture of any architects in Ireland. It may not be perhaps granted to the elders of our profession to see a reciprocity spring up under which the Irish architect, famous as some sort of specialist beyond Dublin, may be called in his turn to do service on other sides of the Channel. There is a hope, however, arising in the spirit of a new generation of younger architects—in the enthusiastic movement for better architectural education of an Architectural Association of Ireland, which it is the delight of their elder brethren of a past tradition to encourage and applaud—that by every legitimate means of competition a school of architects of Ireland may hold its own among the allied societies of the kingdom of the future.

NOTES AND COMMENTS.

EDINBURGH now possesses an addition to its museums, one in which objects relating to the municipal and domestic history of the city will be deposited. A hall on the upper floor of the Municipal Buildings has been appropriated for the purpose. Most of the objects shown have been the gifts of individuals. One class of remains will be interesting to all lovers of building. On many of the old houses in Edinburgh inscriptions used to be carved. A remarkable example which was found in the Cowgate has been described by CHAMBERS. He says:—"The legend is in such old-fashioned character and spelling, and in so dim a situation, that perhaps it has not been deciphered by any but myself for a couple of centuries; yet could anything be more worthy of general notice? In the original form it is, "Gif Ve Deid As Ve Sovld, Ve Micht Haif As Ve Vald;" that is to say, "If we did as we should, we might have as we would;" or interpreted more largely, "If we were on all occasions to act as we ought to do, and to prosecute each object according to the dictates of sound prudence and wisdom, there is nothing that we might not attain." The house of which the inscription formed a part no longer exists. It once belonged to a printer named SIMPSON. The carved stone is now in the Corporation museum. A fine example of the lettering which Scottish stonecutters could produce in 1600 has been derived from the Canongate. There are other varieties of stone carving more or less defaced. A second relic from the Canongate is the ponderous lock and key of the Tolbooth. There are several pictures and engravings illustrative of old Edinburgh, as well as portraits of ancient worthies. The contents are not yet fully arranged, but enough is seen to demonstrate the interest of the museum, and to inspire good citizens to add to the collections.

IN the last number of the *American Architectural Review* Mr. RUSSELL STURGIS, in an article on "The Authorship of Architecture," pleads for more individuality and less of organising control in the production of architecture, or, in other words, to have one artist's work rather than fractions by deputies. In conclusion he says:—The student of the Mediæval and of the antique knows that the individual spirit of the designer is not to be accurately noted, and that the community in which the work of art was produced is alone to be judged from the work itself; but the student of modern art will hardly be so easily satisfied. The habit has gained upon him of asking what was the GOETHE who wrote the "Faust" or the lyrical poems; what was the DELACROIX who was the first and the leading spirit of the time to see painting as the painters of old had seen it; what was the heart and mind of CHOPIN? Ask that, then, of the architect as well. Ask of the architect's work that the architect himself shall be revealed in it, but begin by asking that the architect do his own work. There is still a career for the artistic architect who shall prefer the certainty of moderate fortune and happy labour to the possibilities of great semi-commercial success. The instance has been mentioned elsewhere of an Englishman who, twenty-five years ago, ambitious, aspiring, with lofty ideas of his art, said with a groan that if this increase in his business continued he should really have to employ a draughtsman. That instance has been named before; but in the writer's own experience there have been at least three such instances: one an American, who, a swift and ready draughtsman, found it easier to make his drawings himself than to show others how to do so, and who in the course of the few years which were allowed him before his premature death brought to completion several buildings in which every detail of hammered stone or of moulded wood grew out of his own mental processes, and was approved by his own critical eye; of an Englishman transplanted to the United States and passing through almost exactly the same experience, setting up his office in a booth hammered up within the walls of his first American building and there making the delicate details which were to open a new possibility to American designers; of a Frenchman who, first in this country and then in France, deliberately limited the amount of his undertakings to that which he could produce with but the aid of a "tracer." Given a small group of such architectural designers as this, and this chief of the decorative arts may be as personal, as individual and as emotional and artistic in its way as the art of the sculptor. Perhaps the salvation, the renewal of the architectural art is to be found in this way; as assuredly it appears that it is not to be looked for in the methods of a great office however wisely administered, or of the busy overworked architect however nobly inspired.

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: NORTH NAVE AISLE, LOOKING EAST. DETAIL OF CORNER OF FRONT. ONE OF THE SMALLER WEST DOORS.

YORK CITY AND COUNTY BANK, HARTLEPOOL: THE ENTRANCE HALL. THE INNER HALL.

CONSIDERABLE alterations have been carried out to above by connecting the present bank and the adjoining premises for the purpose of making a suitable manager's residence. The basement floor is utilised for coals, larders, &c., and a strong-room under the manager's room, with direct access therefrom, is provided. On the ground floor are the banking premises, entrance hall, dining-room, kitchen, scullery, &c., and usual offices. On the first floor are the drawing-room, study, bathroom and lavatory and water-closet, bedroom and dressing-room. The second floor is devoted to bedrooms, and there is also a large linen store, with small radiator. The entrance hall and inner hall are laid with MAW'S tiles, and wall panelling is applied to the vestibule, entrance hall and drawing-room. The staircase is a special feature in the design. Mr. JOHN BURN, of West Hartlepool, was the contractor.

RESIDENCE, UNDERHILL PARK, REIGATE.

THIS has been built on undulating ground at the very foot of the North Downs, and the reception-rooms planned to command views across country to Leith Hill. The whole of the exterior (with the exception of upper portion of one wing, which is weather-tiled) is finished with pale yellow rough-cast and half-timber work. The porch is of local red brick and moulded bricks. The roof and weather tiles were obtained from Ashford. The builders were Messrs. W. BAGALEY & SONS, Meadvale, Redhill, and the architect Mr. C. E. SALMON, Bell Street, Reigate.

ST. PAUL'S CHURCH, BERMONDSEY: PROPOSED NEW CHANCEL.

OUR illustration represents the perspective view of the plans for the restoration of this church, exhibited by the architect, Mr. HERBERT C. INGRAM, of 9 Ironmonger Lane, Cheapside, a former pupil of Messrs. BODLEY & GARNER. The original church was built in 1846, and has been repaired only once, some thirty years ago, since that date. It was therefore when the new vicar, the Rev. C. H. BOWDEN, was instituted, in a deplorably decayed and ruinous condition. The work of the exterior repair of the fabric was first taken in hand by the new vicar and his church council, and this having been successfully accomplished by Messrs. DOVE BROS., under Mr. INGRAM'S directions, Mr. INGRAM has now produced his plans for the interior arrangements and decoration. The church consists of a nave, north and south aisles, and a very dwarfed sanctuary. The new plans provide for an entirely new chancel, sanctuary, vestries both for the choir and clergy, chancel screen, a gilt wrought-iron cross suspended over the screen, and new choir stalls. The advantage of a stately and well-decorated church in this neighbourhood will be well understood by those who desire the spiritual welfare of the poor, when it is realised that the parish of St. Paul's is one of the very poorest and most overcrowded of all the parishes on the south of the Thames. People living in the midst of miserable domestic surroundings need more perhaps than others the inspirations to spiritual life which are undoubtedly afforded by dignified churches.

THE ARCHITECTURAL ASSOCIATION.

A MEETING of the Association was held on Friday evening last at 9 Conduit Street, W., Mr. W. H. Seth-Smith, president, in the chair.

Messrs. F. Baker and C. J. Goodwin were elected members.

Mr. A. WALLACE RIMINGTON read the following paper :—

Colour in Architecture as Seen through an Artist's Glasses.

He said :—When your committee did me the honour of asking me to read this paper, I confess I accepted the proposal with some little hesitation. There were several reasons for this, the foremost of which was that, as a painter who has only studied architecture non-professionally, I felt some diffidence in addressing an architectural society upon an architectural subject ; but as on the one or two occasions on which I have joined in your discussions I have always been received with much courtesy and forbearance on your part, and as I have a great love for architecture, and have painted and sketched architectural subjects all over Europe for a good many years past, I thought perhaps I might venture to make some few remarks to you upon colour in architecture from a painter's standpoint. Perhaps two further excuses for doing so might be found in the fact that most artists have to make a special study of colour, and that it seems to me the whole question of colour in art is at this moment of special importance.

We live at a time when from various causes the colour sense of civilised Europe has seriously deteriorated, and when, although there is some slight revival or new development of the feeling for colour amongst the cultivated few, it is, perhaps, becoming more and more weakened or obliterated amongst the great majority.

Taking a general view of Europe, and excepting this partial revival, it is difficult to avoid the conclusion that in decoration, in costume, and in the thousand small objects of everyday life colour tends to disappear, and, speaking broadly, where it remains, to become more crude and less harmonious. And this, I am afraid, also applies to some extent to the fine arts. There are a few good colourists amongst the artists of most countries ; but, on the whole, good and powerful colour is becoming rarer in the great picture exhibitions of Europe, and those who have a keen and cultivated appreciation of it are confining their attention more and more to the old masters and to that very small modern school which attempts to carry on their colour traditions. Perhaps it may be said that I am overstating the case ; but if so, it is from no desire to do so, but because the conviction is forced upon me after a good deal of observation and in spite of the wish that it were possible to endorse the popular opinion as to a general advance of the feeling for colour in the decorative arts.

Compare the present condition of things with regard to colour with what it was in the later Middle Ages or in the full tide of the Early Renaissance. Do we not go back to the remaining art fragments of these colour periods and study them with care and reverence, while we are almost hopeless of excelling them in refinement and strength ? Does not the glass of Fairford and Trinity Chapel, of Chartres and Bourges, excite our admiring envy, and can we altogether reach the colour harmonies of the working handicraftsman who produced the enamels of Limoges or the mosaics of St. Mark's, Ravenna, Monreale, and Cefalu ?* Do not the early frescoes which are to be found in French and Italian † churches show a widespread feeling for good colour through the longer periods in which they were produced, which is absent at the present day? If further circumstantial evidence were necessary, one might enlarge upon the significant fact that it is in the out-of-the-way and little modernised parts of Europe that a pronounced colour sense still lingers amongst the people, like the few remaining leaves of orange and crimson of a once gorgeous autumn.

It is not, however, necessary to press the contention. Even assuming that the opinion is too pessimistic, it is better to see clearly the artistic dangers of our time rather than to underrate them.

We shall at least lose nothing by being on our guard against the decay of the colour sense, and we shall gain much by doing all in our power to stimulate and develop it, and whether we compare our present feeling in Europe for colour with what it was in the past or not, it is at least certain that it contrasts most unfavourably with what it has been for centuries past, and still is, in the East. There is, therefore, much room for improvement ; and consideration of the whole question would seem not unadvisable.

And further, in view of the part which colour plays in the economy of nature, and the fact that it is probable that it has some considerable influence not only upon our minds but upon our health, quite apart from its capabilities of giving æsthetic pleasure and pain, it can scarcely be denied that there are still vast opportunities for widening its use and making it a greater influence in our daily lives and the art with which we are surrounded.

And in architecture, as the oldest and possibly the greatest of all the arts, the study of colour cannot, of course, be neglected.

Whether we like it or not, it must come into play more or less in every building. All materials possess colour of some kind, and this colour directly affects the impression produced by a building. Moreover, the good effect of any architectural work, fine in respect of proportion, line and detail, may be completely destroyed by a vulgar colour scheme, with bad division of its colour masses or inartistic colour accentuation of unimportant parts ; whereas, on the other hand, harmonious and refined colour may, as we all know, add immensely to its interest and dignity.

And now, before proceeding to the more practical part of this paper, there is one more proposition which I am sure most of you will agree with, namely, that the whole question of colour is surrounded with great and special difficulties. The condition of public opinion in England and in most European countries with regard to colour is almost chaotic, and although something is at last being done in America,* hardly any attempt is made to promote study of colour as that necessary part of every cultivated man's education which some of us think it ought to be. Notwithstanding this, almost everyone professes some taste in colour, and most people pronounce decided though divergent opinions about harmonies of colour and would consider it an insult if it were implied that they were not quite right about them, even though they might frankly confess to nearly total ignorance of, let us say, electrical science or musical composition. Colour is, however, quite as difficult to deal with as musical sound, and probably much more so. It is not easier to strike an absolutely true colour note than to sing a musical one, and the colour scale has a longer and more subtly-graduated range in point o. ether waves than the musical one of air vibrations. The colourist has to stop his intervals upon a string a hundred times as long as that of the violinist, and he has often to strike a chord of colour with many more notes in it than a musical one, though if he be a great colourist he will produce it with unerring feeling and truth. Every good picture is, in fact, a series of such chords, carefully selected and combined, and perhaps we may venture to assert that every building ought also to be, even though its colour harmonies may be simpler.

This much at least we may say with some degree of certainty, namely, that every good architectural building ought to have some of the elements of a good picture about it, and that one of these elements is harmonious and interesting colour, and, if so, then I would submit to you that it may perhaps be worth while for the architect to consider architectural design in the light of some of the more or less defined principles which guide the artist.

Upon the wider subject of these general principles I do not propose to enter to-night, but did time permit I should like to have included some general defence of such guiding canons in art and trace their development. I must, however, confine myself to saying that there is a certain broad general agreement as to them. *Pace* a few extremists of the naturalistic school, all art has developed from what has preceded it, modified more or less, and sometimes very largely, by the study of nature. The artist, both from experience of what other painters have observed and selected from nature, and from nature herself arrives at some understanding of her laws. He studies other art works, and picks up a secret here and there from the pages of nature's great open book, and thus gradually learns something of how in her most beautiful effects she harmonises and emphasises her form and colour just as he discovers how she produces some of her effects of light and shade. Gradually also he learns that when his picture is bad and out of harmony, it is because he has broken some one of those laws, the necessity for the observance of which, I think, can even be traced into his own personal mode of artistic expression. Perhaps he is to some extent unconscious of this, and, like Turner, has not the power of putting his experience into words, but every painter, even though he may disown it, works more or less by the light of principles as well as mere feeling.

As the appeal has been made to nature it may perhaps be objected that art is art because it is not nature. But all art is, as a matter of fact, founded upon nature, and it would at least seem probable that as we live surrounded by nature's laws and nature's pictures, what is out of harmony with them is probably bad both for our eyes and our intellects. The Creator can scarcely have intended us to live in opposition to them.

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* For example : – Church of the Jacobins at Toulouse, cathedral of Amiens, St. Savin at Vienne, cathedral of Chartres, church of Montoise and many others.

† San Francesco at Assisi, as a single instance.

* See "Instruction in Colour for Public Schools." L. Prang. "Class Book of Colour." M. Maycock. "Colour Work for Schools." H. P. Chace.

In two previous papers read elsewhere I have attempted to project the light of some of the more or less universally accepted canons or principles of composition in painting upon architectural design, and to-night I propose to refer very briefly to some of those connected with colour, and to submit the proposition to you that they also are in a greater or less degree applicable to your great art.

In dealing with the subject I find myself, however, in somewhat the same position that Ruskin did when he wrote "The Seven Lamps of Architecture," and had great difficulty to prevent their turning into thirteen ; but as our time is very limited, I must confine myself to a very few detached ones.

Let us, then, take as our first example that great open secret of nature in regard to good colour which is perhaps more neglected and less understood in these days than any other. I mean the natural law which, in any given coloured object under normal lighting, causes the richest colour to be in the half-tones. The power of any colour-producing surface to absorb the vibrations which it abstracts from white light is limited. Thus, where white light falls most strongly upon an object, there its colour-producing powers will after a certain degree of illumination be most weakened, or, in other words, the balance of coloured rays which it gives off will be most diluted. On the other hand, when the light is less strong there will be less dilution and the colour richer. Take, for instance, this piece of drapery. I think even under this artificial light it is quite evident that the richest colour is in its folds, or half-tones, and the weaker in its high lights, though these have the same colour-absorbing power and receive more light. In the deeper folds the colour is also still further increased by reverberation, like sound in a reverberating space. In other words, the natural law is that the colour should be strongest in the half-tones.

Now although, strange to say, the uneducated eye seldom appreciates this law, the great masters in painting, almost without any exception, have observed it most carefully, or, if you refuse to allow that they thought it out, at any rate they felt its action most strongly. Some of the early painters, whose colour is universally admitted to be of the most exquisite kind, combining strength with subtlety and truth with decorativeness of the highest description, especially did so. Such painters, for instance, as Botticelli, Benozzi, Gozzoli, Fillipo Lippi, the Bellini, Perugino and Titian even went as far sometimes as almost to bleach the high lights of their drapery, and curiously enough, without taking special note of this, one is almost unconscious of the fact, which, instead of weakening their colour schemes, strengthens them.

Turning from the early to the later schools, whatever rank we may give Rubens in other respects, he was at any rate a splendid colourist. Here is what he says in his own words with regard to flesh painting :—"Paint your high lights white. Place next to it yellow ; then red, using darker red as it passes into the shadows; then, with the brush filled with cool grey, pass gently over the whole until they are tempered and sweetened to the tone you wish." Finally, to step back at one stride from Rubens to early Classic art, in the few fragments of Greek painting that are left to us the high lights are almost invariably "faintly stained."[*] I think some of the pictures which are upon the walls, and which have been kindly lent me by some of my brother artists, will serve also to show this principle. On the other hand, the bad painter, and especially the bad modern painter of the French and German schools, nearly always puts his very strongest colour into the high lights, and, his half-tones look, in consequence, poor and thin, while not infrequently vulgarity sets its seal upon his work.

There are, of course, exceptions to every law, but in the main this great colour principle of nature might, I think, be shown to be of value in every form of art into which colour enters. And, turning from painting to architecture, I cannot help thinking that the better recognition of it ought also to be of assistance.

Though it may not have been definitely worked out in the minds of some of the architects in the Middle Ages and the Early Renaissance, it would seem more than probable that it influenced some of their work. Perhaps some of the brick and marble architecture of Italy and Spain show this. But whether this is so or not is a matter of relatively small importance, for in architecture as in all else, progress, building upon selected precedent, ought surely to be more striven for than imitation.

To take one or two examples of how the observance of the principle might reasonably affect architectural design. In exteriors, in which varied colour enters, it would indicate the undesirability of putting a weaker colour into a cornice immediately under the eaves of a building, into the under-cut portion of a projecting moulding, or into any hollowed or shadowed surfaces, rather than into those exposed to the full strength of the light ; conversely, if it were desired to strengthen the general colour effect it would be well to enrich the former with relatively strong and warm colour.

One is often struck, from the painter's standpoint, by the way in which a building of warm-toned material has been made unbearable to the artist by the shivering coldness of its painted woodwork, just where the eye, accustomed to nature's methods, would expect additional warmth and richness.

Examples of the advantage of keeping recessed mouldings warm and full in colour may easily be found in the mixed brick and terra-cotta architecture of Italy, especially of such districts as those of Pavia, Milan, Bologna and Brescia. In the church of Chiaravalle warmth and richness of colour are throughout introduced into the shadowed mouldings and cool coloured materials are always avoided in them ; and the same thing applies to the exquisite little campanile of San Gottardo at Milan. Numberless other instances might be adduced, but I would rather suggest practical experiment than precedent. I am not contending either that the general colour or portions of the colour of a building should not, if it is desired, be pale or cool, but merely that the relative paleness or coolness of its parts should, if the colour be varied at all, be in the right place. A whitewashed cottage is often delightful, but the violent contrast of much modern white woodwork is detestable, coming, as it often does, just where it is not wanted. So, too, the cold grey frieze or decorated coving of stucco or cement, which is sometimes to be found under the eaves of a red brick building, is often most injurious to its colour scheme. It is cool colour in the wrong place, and it is, I think, especially to be avoided in our sunless climate, where there is no assistance to be obtained from shadows full of rich reflections, and where colour is so much needed in our buildings. We may also draw the further deduction that if the architect uses the richest colour at his command in his high lights, it will not merely be wasted but actually injurious. Experiment will, I think, prove the main contention. We must remember also that colour is so potent that it may completely overpower the light and shade of a design. It surely cannot then be right to use colour in such a way as to lessen the effect of the carefully planned light and shade which the architect has given by his mouldings and other projections and recessings, and observance of this law of colour will help to prevent our doing so.

In addition, it is a significant fact that the experience of the painter shows that by working thus in harmony with the principles of nature it is much easier to deal with strong colour and yet make it look refined. If an example were required to prove this I might instance Albertinelli in the Visitazione at Florence, of which I have placed a small colour study upon the walls.

The next principles to which I propose to refer are the twin ones of "inter-contrast" and "quality." "Inter-contrast" may be described as that interweaving of divergent colours which tends to make them appear pure and luminous. "Quality," which is a vague term to which various meanings are attached, may be roughly defined for our purpose as texture.

In painting, the appreciation of and the careful striving after these characteristics of good colour by an artist have much to do with his position as a colourist. For a second-rate and insensitive colourist there is none of that exquisite vibratory or living quality which makes it uncertain whether the tendency of a given colour is in one direction or another, and renders it difficult to analyse it.

In the work of a great painter there is hardly any quiescent or absolutely flat colour. It is all full of palpitating life, and is composed of slightly differing and opposing tendencies and woof and weft of hue towards the warm and cool end of the scale. Take, for instance, the dark-toned sea in this picture by Mr. Colin Hunter. Here its broken quality shows a slight tendency towards green, there towards violet or purple. Perhaps there is a broken red tone under it which tells through : perhaps there are particles of orange which do the work of rendering it luminous and transparent. Take what looks like a nearly plain blue sky, which yet is full of light and not a mere surface covered with a coat of paint. Examine it, and you will find that warm and cool colours, separate or only partially overlaid, telling through each other, give it its chief charm, a suggestion of that exquisite quality which Longfellow suggests when he speaks of

> The tender azure of a sky
> Just washed by April rains.

The physical and optical reasons for this are not far to seek. The retina is excited by the juxtaposition of colours of a slightly complementary tendency in small quantities just as it is by larger adjacent masses. The mind also is stimulated by the introduction of an element of mystery into the resultant tint which gives those possibilities for the imagination without which no art work is quite satisfying.

I need not pursue this part of the subject further. I would rather appeal again to nature and assert for her that no colour of hers is ever without this characteristic in greater or less degree, and that where it is especially present there her colour is of the loveliest kind, as, for instance, in the shimmering atmospheric tints and in substances like mother-of-pearl and opal. In a word, experience suffices to show that inter-contrast is essential to give colour its full power and interest. It is the art principle of "exchange" or colour balance—upon which I shall touch shortly—carried much further, and is of vital importance. And not only are inter-minglement and inter-contrast of much value, but also in many cases what, as I have said, the painter calls "quality" or texture. All nature's colours are full of this, and though it is sometimes so subtle as not to be easily observed, and the resultant colour-tint seems almost flat, it is nevertheless omnipresent, and it exists, of course, side by side with inter-minglement of colour tones.

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[*] Fuseli.

It is obvious that these two sister principles are also very applicable to colour in architecture. One sometimes sees a building or part of a building which is interesting in its forms and detail, and at the first glance is not absolutely bad in colour, and yet one feels it is monotonous and unsatisfactory, and that it would be impossible to sit down and paint it. One asks oneself why, and one discovers it is because its colour surfaces are dead and uninteresting, and because there is no play of intermingled colour and no "quality" in them.

There are many ways in which this dull monotony might have been avoided at little or, perhaps, no extra expense, by better comminglement of material, by rougher and less machine-made surfaces, or by saving the cost of a little carved detail and putting it into the colour scheme. It is, moreover, not only a question of good colour and quality, but also of contrast. In a picture it is essential that different kinds of things should be painted with a different touch; that some should be expressed with smooth sweeps of the brush, others by roughness and loading of the pigment. Variety of handling is necessary to avoid monotony. And as texture so much affects colour, the architect also can by using varied and contrasting surfaces make the colour of his stone, brick, metal or other material more pleasing to the eye.

If this applies to exteriors, how much more to interiors. There the architect has endless opportunities for producing colour which shall be real colour and of educating the colour sense of his clients. Paint, distemper and other stains, gilding, coloured materials of all kinds, give him a palette almost as rich and varied as that of the artist.

Much of our modern colour decoration, ignoring as it does these two delightful characteristics of good colour, viz. quality and inter-contrast, is crude and offensive or severely cold and nartistic, and though it is not of course contended that relatively plain and flat surfaces of colour should never be used, even when they are employed they may be made more luminous or interesting by some attention to these principles.

"Inter-contrast" and "quality" may perfectly well exist even in what appears at a little distance to be a relatively flat surface, and, of course, this has to some extent been recognised n modern decorative work of the best kind. Apart from artificial surface colours for internal decoration, these characteristics, of course, come into evidence in many materials which are in use for decorative purposes, and which, as in the "encrusted" architecture of Venice and Arabia, may add great charm to a building. In textured marbles, for instance, the transparent play of colour is one of their chief sources of beauty, as it often is in the vitrified colours of tiles and in various metallic or semi-metallic surfaces. Distance also blends decorative colouring, when the individual colour spots are somewhat crude, into rich masses of colour apparently full of quality and iridescence, and in large build-ngs this fact might, perhaps, be taken more advantage of.

Granting that these two characteristics help much to avoid monotony, something further is also frequently required which, while assisting the general harmony of the colour scheme of a picture, tends still further to prevent it. The painter finds this n the large and broad principles which he sometimes calls "exchange," or partial repetition. "Exchange" as applied to colour may be described as the carrying over of a smaller portion, or repeat, of one colour mass into another. In most scenes in nature which strike us as especially beautiful we find this constantly occurring. The deep blue of the sky is carried down in smaller quantity by cool cast shadows or reflections from water or leaf surfaces into the warm tints of a landscape, and the effect gives us exceptional pleasure. The red of the sunset repeats itself upon rocks or tree-stems, or is carried into the cool tones of a green glade by touches of autumnal foliage, and we again feel a sense of satisfaction in the colour chords.

As in nature, so in art; and in the work of almost every good painter you will find the principle carried out, even though t may have been less the result of deliberate intention than of unconscious artistic feeling.

To go no further than the pictures in our own National Gallery, plenty of examples might be quoted. I will refer to only two. In Titian's "Bacchus and Ariadne" there is a deep-toned distance of remarkable strength and purity. Its colour is repeated, or exchanged over, into the warm tints of the figures, while some of their rose coloured drapery is carried up into the sky. In the "Virgin and Child" by Fra Bartolomeo part of the drapery of the Virgin is a very peculiar cool greenish-grey blue. It has its exact counterpart in the colour of the sky, while portions of the flesh tones are repeated in the clouds.*

Probably you will also be able to detect it in the case of some of the pictures hanging upon the walls.

It is evident that it also applies to architectural design, that many buildings owe part of their satisfactory colour to it, and that it might help to redeem the colour scheme of others. In many cases the colour of a building material has nothing to do with its strength or utility, and there is a fairly free choice to the architect, apart from his opportunities for giving artificial surface colour in interiors and elsewhere. The principle would seem to be very beautifully carried out in parts of the exterior of St. Mark's and in many other Venetian palaces in which small spaces and panels, and even dots of colour, are carried down into other masses and help to give unity without monotony. So also in some excellent buildings of the Early Renaissance elsewhere in Northern Italy and in many Spanish ones which I have sketched with delight. But although a good many precedents may be found amongst the exteriors of architectural buildings, colour has apparently for a long time been so little considered in their design that it is rather to the future treatment of them, when there may be more feeling for colour, that I would suggest that the principle may apply. No principle, however, can do more than assist the artist, and much artistic feeling is always required to carry out colour repeats and exchanges successfully.

Taking two more detached principles from the sister art, I would refer next to those of gradation and "focussing."

We all know how important a part gradation plays in nature, and that scarcely a colour space can be found in a landscape in which it is not present almost to the verge of infinity. Beauty of colour does certainly depend on it in a large degree, and is still further increased in many instances if the gradation culminates in a focus or spot of colour which is predominant.

How, it may be asked, can these principles possibly apply to architecture? Perhaps you will permit me to answer that question by a very brief description of a building which is to me amongst the most beautiful pieces of architectural colour I know in Europe, and to which I have made more than one pilgrimage. I mean the Palazzo Publico of Piacenza. It is a structure of considerable size, interesting and beautiful, not only in respect of its colour, but also as to its general forms and details.

The first storey of the north façade is carried upon a sub-structure of pointed arches raised upon piers. These latter are of cool-toned marble, coolest at their bases, and gradually intermingled with stone of a warm tone, which approaches a delicate pink grey of indescribable tint at the upper part of the arch and in the spandrels. Warmth of colour thus having been led up to, the first storey is built of terra-cotta of about the colour of red sandstone, the grey of the substructure is "exchanged" into this in small quantity by the marble shafts of a line of extremely beautiful windows, and the colour tends towards increased warmth as it rises to the battlements above it. These are finally of red brick of the deepest burnt sienna, mellowed and qualified, of course, by irregularity of tint and the action of time, but still a splendidly strong "trumpet blast" of red against the sky.

The building is as harmonious in colour as a Bellini background, and it is, I think, an instance of what might be done by introducing the painter's principle of gradation in exteriors.

Nature is continually employing it in the happiest way in her treatment of buildings. I have often painted a roof in which the tiles have been toned down by time to one large gradation towards brown umber or a russet grey, whilst perhaps some interesting feature remains the strongest note of the original colour.

Leonardo da Vinci thought painters might learn a good deal from an old wall. So perhaps nature's treatment of the colour upon a roof may have some significance for the architect. The builders of the delightful old Tudor houses of Gloucestershire varied the size of the shingles or tiles in a progressive ratio towards the ridge. Why should not we vary our colour somewhat similarly? Gradation being a source of beauty in colour, we should at least be careful not to destroy it where it is given by curved surfaces and gradually increasing shadows, which even a few spots or patternings of colour which are out of tone may easily do. "Focussing" also is unquestionably of great use in painting, in rendering colour more interesting, and in accentuating features or details which it is desired to bring into special notice; and in colour schemes for architectural buildings I think it might also be made use of.

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* Other instances of more complexity may be found in the following pictures:—Ghirlandaio's "Procession to Calvary," Garofalo's "Madonna and Saints," in almost every Turner and most of the pictures of Rembrandt, Vandyke and P. de Hooch.

A most important aid to the painter in making his colour tell with some approach to the force it has in nature is, of course, contrast. In fact, it is at the very root of the painter's art. Without contrast he cannot even express a sense of light. So, too, with regard to colour; the full force of colour can only be felt under conditions of contrast, just as movement can best be realised in opposition to repose. Contrast is, however, so powerful an instrument that the best painters are careful not to overdo its use. A picture is helped by one or two passages of strong opposition—sharp darks entering boldly into lights, or warm colours telling forcibly against cool ones, but in the greater part of a good picture the artifice is not resorted to, and harmony may easily be destroyed by over-contrast, which is the besetting vice of the second-rate painter. It is a very keen-edged, though valuable tool, and may easily cut too deeply, and I submit that these considerations apply quite as much to colour in architecture as in a picture. More buildings seem to be ruined by over-contrast than from any other cause, and it is certain that many otherwise fine buildings are often prejudiced in cultivated eyes solely by reason of it.

It is scarcely necessary to call to your minds some few buildings in London in which strong contrasts have done their vulgarest worst, and seem to have tried to shout down that implacable enemy of the modern architect, namely, the street advertisement.

Still, so valuable a resource as strong contrast cannot be neglected, and in all contrasts the question of the relative quantity of the colour masses is an important factor. A violently opposed colour which would be unendurable when in large volume will be no longer irritating if it is in very small quantity relatively to the principal colour masses. It is often most successfully employed in pictures in very small points of opposition, and it may also be of great use if skilfully introduced in forcing several rather too divergent colours into harmony, just as a slightly discordant accidental is often valuable in musical composition.

Examples of this may, of course, easily be found in the works of the great colourists and also in the ornamental embroideries, enamels and mosaics of the good colour periods and nations, especially in those of India and Persia. In architecture I have seen many charming examples in Italy and Spain and in other parts of Europe. The harmonising effect of the detached and isolated points of strong colour in many Moorish and Arabic buildings is often delightful. Moderate contrast of colour would seem to be of special use in architecture where the building itself is relatively uninteresting.

Time presses, however, and leaving some other general principles upon which I should have liked to have touched, I must pass on to two final ones which are closely related and are certainly common to the arts of both painting and sculpture, namely, breadth and harmony.

It seems almost absurd to mention such well-recognised qualities, but I venture to think that, although harmony and breadth of colour are often talked about, they are not such simple matters as most people suppose. We are deceived when we look at a great and harmonious picture by its apparent simplicity, and we fail to realise how carefully through all its colour scheme the subordination of every particle of colour has been felt out. No art work can be really great without harmony and without breadth, for they are necessary to that artistic unity which is the most universally accepted of all laws in art, namely, that in a given work some one essential idea or impression shall hold the attention or appeal to the emotions.

Harmony does not, however, mean monotony, and a picture will be greater and more impressive if, while containing a great range of colour, it is still harmonious. A musical chord is built up of divergent tones, but they bear an inter-relation; and just as in music there is a science of harmony which is of some assistance to the musician, and which is founded upon physical and psychological facts, so in colour, as I believe, there are underlying physical laws which, if we knew more about them, might be of great assistance to us. The universe is built up of what we are pleased to term laws, and it would be strange if there were none which underlie our pleasurable and painful sensations with regard to colour as they do with regard to music. Be this as it may, what I would submit once more is, that as harmony of colour is of the first importance in painting, it is also of the first and greatest importance in colour as applied to architecture, and in much of our modern work is insufficiently studied.

Nature, if you leave her alone, tends to harmonise the discords of colour of almost any building, softening down the sharp contrasts, overlaying the surfaces with lichens, or toning them down by time stains and oxidisation; but we often refuse to learn from her, and go on cutting up our pictures with a patchwork of violently opposed colours, and destroying the effect of buildings by crude contrasts and over-emphasis.

Systematic study of harmonious colouring would thus seem to be as needful for architects as for painters; and as it is now mainly a matter of artistic feeling, whatever help we may some day obtain from scientific systems of harmony and counterpoint, somewhat resembling those of music, I would put in a plea for the study by architects of the great masters of colour in the sister art of painting; amongst the old masters of such painters as the Bellini and Perugino, Titian, Veronese, Andrea del Sarti, Velasquez, Luini and Giorgione, and amongst the moderns, Turner, Sir Joshua Reynolds, Watts, Burne-Jones, Lady Waterford, Muller, Albert Goodwin and other members of that great school of our English water-colourists, which is universally recognised abroad as being without a rival in Europe, but which we ourselves are too apt to depreciate.

Pictures are interpretations of, or siftings from, the great colour schemes of nature, and they are easier to study and analyse than those of nature herself. Careful analytical colour studies, as opposed to mere copies made from the pictures of great colourists, may do much to educate the eye and something towards discovering some of their principles.

Most painters plan out in their minds some more or less clearly seen scheme of colour for their works. Some go further and make a definite colour-scheme upon paper, which, if it is not allowed to chain down the ideas of the painter too much in the development of his picture, is an admirable plan. It might be and, I suppose, often is, adopted by the architect. But in order to conceive a good colour-scheme, the colour sense of the artist must have been developed. He must have the same kind of experience and feeling which enables the musician to combine musical sounds. Apart from what has been said as to the study of pictures, some few additional means of training the eye and the mind may, perhaps, be suggested. Notes made direct from nature of natural combinations and composition of colour are, of course, valuable. They should not be too detailed, but made rather with a view to decorative and not realistic colouring. They will, of course, not only store the memory but will help to educate the powers of observation. Of course I need say nothing to you of the study of Oriental and other systems of colour decoration.

One curious result of the systematic study of colour carried out in this way is that it also usually develops a more sensitive feeling for form, for notwithstanding what has been said by some writers, it is hard to enjoy a space of colour without being influenced by its form.

Lastly, throughout what I have said I have assumed that what is beautiful and harmonious in colour is admirable. I cannot conclude, however, without touching upon another side of the question. We live in a strange period of the world's history, and just now, among other strange things, there is what most of us think a morbid current of reaction both in literature and in art towards the ugly and repulsive. We know to what this has led in naturalistic literature. The question for us to decide is whether we shall allow ourselves to be influenced in the same direction towards the ugly in art? I trust, for my own part, that the answer may be emphatically in the negative. The movement has dragged many into it through fear of their being supposed to admire what the opponents of beauty often contemptuously call the "pretty." It also includes those amongst Impressionist artists whom William Morris has spoken of as "loudly proclaiming their enmity to beauty" as a deliberate choice, and I think, in addition, not a few who have absolutely no sense of the beautiful, but who look upon art merely as a mode of expressing facts or ideas. If art is not to rest upon beauty as its chief foundation it seems to have no raison d'être. We had better give up attempting to be artistic and confine ourselves to empirical science. Architecture would then no longer be an art but merely the science of building, and could be left to the builder and the engineer. In such a view of art good colour could scarcely find a place But this side current (for after all it is a side current, though it may lead to a dangerous cataract), has arisen principally, as far as colour is concerned, from the weakness of the colour sense at the present day. It is also a standing temptation both amongst artists and critics to place technical skill in front of the higher qualities of an art work, and the production of good colour is one of the least obvious evidences of technical skill. So it is somewhat under-rated.

Perhaps we may trace some slight reflection of this spirit in some of the recent architectural buildings which have risen around us, and in some of the current opinions about colour in architecture that we hear expressed. Let us beware that it does not help to make the flickering flame of such feeling for beautiful colour as exists amongst us burn yet lower.

Lastly, as one who believes that a field lies open for the creation of a pure colour art, wider and greater in its influence, and differing from anything that we have yet seen, and which might do much to add to the joy and culture of life, may I venture to say that whatever architecture may have done in the past for the development of the colour sense, it has it in its power to do much more in the future. Architecture is the one art with which all classes are in contact, and which perhaps more than any other has the opportunity for silently presenting and interpreting beautiful form and colour to them. And those of us amongst painters who love and reverence good architecture with an intensity which we cannot put into words, and who have drawn so many of the great buildings of the past with a thrill of enthusiasm which we can never forget, sometimes have visions of cities in which every building should be full of interest and beauty, and in which colour should play an infinitely greater part in architectural design than it does at present.

And as tending towards the realisation of such a dream, which we know from the experience of the past is not altogether impossible, I cannot help thinking that the closer association of the two great arts of painting and architecture may be of assistance to both, and that more especially in regard to colour, architecture might perhaps honour painting by considering some of her principles and methods.

I would therefore ask you to consider anything I have said thus briefly with regard to a few of the best recognised of them as merely suggestive of some trains of thought with that object in view, and which you may possibly think it worth while to follow out in the light of your more practical experience of architectural design.

Mr. G. H. Fellowes-Prynne proposed a vote of thanks, Mr. J. D. Crace seconded. Mr. A. T. Bolton and Colonel Luard supported the motion.

SOCIETY OF ANTIQUARIES OF SCOTLAND.

THE usual monthly meeting of this Society was held in their library at the Museum, Queen Street, on the 10th inst., Sir James Balfour Paul in the chair. The first paper gave a detailed account by Dr. D. Christison, secretary, of the excavation of various military works adjoining the Roman road between Ardoch and Dupplin, Perthshire, undertaken by the Society as a sequel to their excavation of the camp at Ardoch, and carried out last summer by the kind permission of Mr. Samuel Smith, M.P., of Archill, Sir Robert Moncreiffe, Bart., and Mr. Kington Oliphant, of Gask, on whose properties the respective works are situated. The road called the Roman road on the ordnance map, leading from Ardoch to the Earn, was found to be 20 feet wide, slightly arched, and composed of tightly-compacted gravel, but opposite Kames Castle it was found to be paved with roughly dressed flat stones covered with a layer of broken stones, and surfaced with compacted gravel. Besides the well-known Kames Castle, 2¼ miles from Ardoch, Pennant mentions three fortlets between it and Ardoch which have entirely vanished. Another fort mentioned in the statistical account, north of the house of Archill, was found by Mr. Mackie, who had charge of the excavations, in fair preservation. The ground plan of Kames Castle is peculiar, and perhaps unique, in Scotland, in having a rectilinear rampart defended by curvilinear trenches. The entrance is from the south by a paved ramp 8 feet wide, and a paved way led from the entrance to the Roman road, which passes about 30 yards to the south. No relics of any kind were found, except two shapeless lumps of lead. The road going eastward from the creel ford of the Earn is traceable at intervals, and in many parts defined at both sides by kerb-stones about 10 feet apart. The military works adjacent to it on the section east of Strageath are nine in number, consisting of six small circular posts, a larger oval post or fortlet, a rectilinear camp or station and at a greater distance from the road a curvilinear fort. The six small circular posts are aligned along the road at intervals of about half a mile, some on the north and others on the south side of the road, but having their entrances always facing the road. The one which was first excavated measured 112 feet in diameter over all, the level interior, which had no rampart, being 46 feet, surrounded by a trench 12 feet wide and 4 feet deep, with remains of a rampart outside the trench. In the centre of the interior area were four post-holes, forming a square figure on a base of 9½ feet. In another case these post-holes were found connected by horizontal beams. These indications seemed to show that the purpose of these entrenched mounds was to support wooden watch-towers for protection of the road. The large camp near Gask, all traces of which appear to have vanished before the ordnance survey was made, as it does not appear on the maps, was, however, located by making numerous cuts across the trenches, by which the whole plan was recovered, even in the ploughed land. It did not seem, however, to have been occupied for any length of time. The curvilinear fort at Kempy strongly resembles the Orchill fort, and they are both of a common native type. Kames, therefore, was the only Roman post on the road in the seven miles between Ardoch and Strageath, and east of Strageath are the six watch-towers along the road to the Gask camp, the very slight character of which suggested that the intention to form a station there had been abandoned. Was the intention to carry the road beyond Dupplin also abandoned? The native forts at Kempy and Orchill have no obvious connection with the road, but the Romans may have occupied them and strengthened them with palisade trenches of a kind which has never been otherwise met with either in Roman or native works. In the second paper Mr. Thomas Ross, architect, gave a description with drawings of the sculptures representing the miracles of St. Mirren carved on the east wall of St. Mirren's Chapel, in Paisley Abbey Church. There had been considerable speculation as to what these sculptures were meant to represent, but Dr. Cameron Lees discovered that they represented the miracles of St. Mirren as detailed in the Breviary of Aberdeen, compiled by Bishop Elphinstone about the end of the fifteenth century. These are represented in the sculptures in ten scenes, and can be all recognised as described in the Breviary. The chapel of St. Mirren was founded about the end of the fifteenth century, and there can be no doubt that the sculptures were carved during this period. It is interesting to know that there was at that time a sculptor named Thomas Hector in the employment of the convent, who might have been the person who executed the work. The architectural accessories of the carvings are very beautiful, and prove the period of their execution. By the kindness of the architect of the present restoration the author was able also to exhibit drawings of two very fine incised grave-slabs, which were found at a depth of 12 feet in the foundation of the south-west pier of the central tower. These slabs are of a type frequently met with in the thirteenth and fourteenth centuries. In the third paper, Rev. J. E. Somerville, F.S.A. Scot., gave a description, with photographs, of a series of rock sculptures of cups and rings on the Stronach Ridge, near Brodrick, Arran. These are the first of the kind discovered in the island. They were first observed by a shepherd some twelve years ago, who informed the late Mr. Robert Hutchison, F.S.A. Scot., of their existence. Mr. Hutchison visited them, along with Mr. A. Ribbeck, who photographed them; but they had not been communicated to the Society till now. They apparently present a special type of these rock-markings.

THE NATIONAL TRUST.

THE American *Architectural Review* has the following appreciative notice of the mission of the representative of the National Trust for Places of Historic Interest or Natural Beauty in the United States:—

The visit of Mr. Ashbee to this country is of much more than ordinary interest. Mr. Ashbee is an architect of considerable mark in England, and is one of that group of younger men who have grown up under the influence of Mr. Bodley and been imbued with the thought of that school. It is to these men that the growth of interest in the arts and crafts is due, and it is their efforts which have encouraged the various minor handicrafts associated with architecture. Mr. Ashbee's name is more especially connected with the men who form the Art Workers' Guild, and he himself has produced in his shops many delightful pieces of handiwork, examples of the art of the gold and silversmith, the enameller and the worker in wood. The Essex House press is also Mr. Ashbee's undertaking, and has followed in the lines of Morris's work. It bids fair to show many of the good qualities of the Kelmscott press without the eccentricities and affectations which marred much of Morris's press-work. Founts of type, initials and other ornaments used in the press have been Mr. Ashbee's design; and bookbinding, with its many special branches, has received considerable study.

Mr. Ashbee is leaving his active practice and the workshops which are conducted under his guidance, to further the objects of the Society which is attempting to rescue from destruction the many buildings of historic and architectural interest which otherwise might fall before the somewhat relentless march of utilitarianism.

It is a work which ought to appeal very directly to every architect in this country, and perhaps with even greater force to those who look upon England as the mother country. The idea of the English Society in sending a representative here is to urge upon us to form similar societies, primarily for the purpose of saving such places and sites here, and secondarily, by affiliating with the English Society, to strengthen their hands and our own at the same time. The English Society extends its work to include places of natural beauty as well. In Massachusetts this latter work is fully organised and has already accomplished much, and the various park commissions of our great cities are fully alive to the wisdom of this policy. But the country is very slow to awake to the need of organisation which shall preserve such architectural and historic monuments as we possess.

The English Society is one of recent foundation, but it has met with a generous response in England and has already succeeded in preserving many interesting places which would otherwise have been lost. Many will remember a very charming block of almshouses which stand on the Mile End Road in East London. This delightful group was but one of many which existed in different parts of London. Some of the others have already been torn down as ruthlessly as was the old Hancock House in Boston; but the Trinity Almshouses were saved and their permanent existence is now assured. This is one instance out of many. Such places are of very great importance to the architectural student, and it is certainly worth while not only to support the English Society, but to form similar societies to do similar work here.

It was only through the strenuous efforts of a few people brought together by the urgency of the case, that the Bulfinch portion of the Boston State House was preserved; and it is humiliating to consider how many fine things in Boston have disappeared for sordid and commercial reasons. The difficulty of caring for the older buildings of this country is of course increased by the fact that so many are of wood, but in many cases such structures might be removed when no longer possible in their original position. Misdirected zeal is sometimes quite as dangerous as an utter lack of sentiment and appreciation for valuable things. It was misdirected zeal, undoubtedly, which prompted the movement to rebuild Bulfinch's façade; and it was this same misguided spirit which prompted Philadelphia to take up the restoration of Independence Hall. In this latter case the work was well under way before the architects who cared realised what was being done, but it was not too late to stop some ill-advised work and to direct the remainder of the repairs and restoration so that the work is now eminently satisfactory. When more recently a similar task was undertaken for Congress Hall, the same architects were consulted and the work is being carefully and well done. When, however, one reflects how easily this opportunity might have been let pass and how difficult it is for the busy man to believe that it is his especial duty to inquire into a thing which seems wrong, one appreciates how valuable would be a society whose especial province such work would be. Quite recently old Faneuil Hall in Boston was repaired and pretty extensive work done on the exterior, but one ventures to doubt if many of the people who cared about the historic hall and who passed it daily could have informed one as to how this work was being done and under whose guidance.

The old Boston State House is now in the hands of the repairer. Some blatant Irish organ demanded that the lion and the unicorn should be removed (this has been demanded pretty often before). These royal emblems have now been taken down, presumably to be repaired and replaced, but of the many passers-by how many really know? Just in such a way have many notable things connected with our history disappeared. These are, of course, merely illustrations. In Massachusetts the Trustees of Public Reservations do perform this very sort of work, and wherever it is possible use such influence and such funds as they possess for this purpose. But we need such organisations throughout the country, and there seems to be no doubt that if these societies were banded together they would occupy a more powerful position, and could often wield national influence in preserving places which were of more than local importance.

Moreover, it is not the public buildings alone which are of interest. Often a private dwelling or an old inn may have in its architecture or its history or both as much of general interest as there is in an old public building. When such buildings are threatened with destruction the trouble is generally that no one knows about it until the damage is done. Salem, Newburyport, Portsmouth, even small obscure places like Newcastle, N.H., which was a very early settlement, are full of private property which is of public interest. The whole neighbourhood of the James River in Virginia is filled with such work, all associated with great names in the history of this country and with stirring deeds. In many cases the money which originally founded these houses has gone into other hands, and not infrequently they fall into decay or are neglected until beyond repair. In Virginia and in the more important New England towns there is a considerable knowledge of and pride in such monuments, but it is nevertheless a very real risk which we are constantly facing. A society with branches throughout the country would keep in touch with all interesting monuments, and would be in a position to take action promptly if any such were threatened.

Mr. Ashbee's mission in this country is therefore of real vital interest to us, and one cannot but hope that his appeal will touch a responsive chord and that he will find many in this country willing and able to join the English Society in their work. The idea, as has already been pointed out, is to have similar societies formed here and affiliated with the English Society; that each society should be represented in the English Society and that as many as possible should join the English Society and pay an annual fee of 3 00 dols. These annual fees would help in the maintenance of the organisation and entitle the member to the privileges of the Society's rooms which they hope to establish in the old Henry VIII. Palace in Fleet Street, Temple Bar.

Such in brief are the objects and aim of the English Society, and while without doubt there is a small body of cultivated people with broad views who would be ready to give their support to the English body and further the preservation of those things which are our joint heritage, the great majority of our people would look askance upon any sort of association or affiliation which would smack of subservience to the older country. Our own work must be done by our own independent societies, and there is ample work for them and urgent need. When such societies are formed it would be of value if individual members belonged also to the English Society, for the interchange of views between men engaged in the same kind of work is mutually advantageous; but that the American societies should be in any sense chapters of the English Society is quite impossible, nor indeed is it desirable.

Even if Mr. Ashbee is unsuccessful in this part of his programme we should at least feel grateful to him for the work he has done in arousing our interest in and drawing our attention to the necessity of prompt and concerted action if we wish to retain and preserve those memorials of our early history which year by year grow fewer and become more valuable.

PROFESSIONAL PRACTICE.

A MEETING of the Devon and Exeter Architectural Society was held on the 6th inst., when a paper was read by Mr. James Crocker, F.R.I.B.A., on "Some Recent Law Cases as Affecting Professional Practice." In the course of it the author said :—

There are two or three classes of cases affecting us as a profession, such as actions for the recovery of fees, actions for alleged negligence in the fulfilment of duties, actions arising out of withholding certificates and for penalties, besides other litigation having a bearing on building operations, although not directly between architect and client. I shall endeavour to place a few of these before you, giving only the leading facts and results and classifying them as well as may be possible.

I take first the case of Burrough Hill *v.* G. A. Barnard, in which the plaintiff (an architect) claimed of the defendant (also an architect) *8l. 8s. 8d.*, balance of an account for attending Court and giving evidence in support of the present defendant's claim for fees against his client, in which, after a three days' hearing, he had succeeded with costs.

In the case of Hutton *v.* Chorley (heard before Mr. Justice Channell and a jury) the plaintiff claimed 147*l.* for preparing plans, specifications and quantities for altering and rebuilding a hotel to cost 1,800*l.* or 2,000*l.*

Phipps & Jackson *v.* Brownrigg was a curious claim for 526*l.* 5*s.*, prosecuted by the widow of the late Mr. C. J. Phipps and his partner, Mr. Arthur Blomfield Jackson, for plans and drawings for a proposed theatre in the Haymarket, and in the alternative damages by reason of the defendant's failure to get the plans approved of by the London County Council. His lordship said the matter had been shipwrecked by the action of the County Council in rescinding their approval of the site; but as that prevented the approval of the plans coming before the Council, he reluctantly gave judgment for defendant without costs, expressing an opinion that some satisfaction should have been given.

Whipham *v.* Everitt, before Mr. Justice Kennedy in the Queen's Bench, is worth recording, because of its bearing upon the scale of the R.I.B.A. Plaintiff brought an action to recover 169*l.* 16*s*, being 3 per cent. on 5,660*l*, the amount of a single tender for plans and specifications for the erection of a villa at Saltburn.

I now pass on to summarise as briefly as possible the facts connected with the recovery of fees in a "quantity" case. One further case will perhaps suffice.

Arthur Crocker *v.* C. J. Head. The former, a quantity surveyor of Fenchurch Street, sued the defendant, a chemist, for 24*l.* 15*s.* 6*d.* The plaintiff had, as is usual, received his instructions from the architect, it was said, with the full concurrence of the defendant, but the latter denied this. The work was suddenly abandoned when the estimates came in, and the defendent settled his architect's account, but refused to entertain that of the quantity surveyor. He had, however, to pay it in full. This is not an uncommon contingency in the course of practice, and appears to prove that if an architect's instructions are to obtain tenders, he may do what is reasonably necessary in order to get them. Speaking broadly and generally, it is seldom a recalcitrant client can escape liability for work done by an architect when there is nothing of the nature of a speculative agreement between them. On the other hand, it is by no means certain that the 3 per cent. scale can be maintained for work abandoned after the tendering stage.

With reference to "light and air," I will refer to two cases of a typical character, which may indicate how dangerous it is under certain conditions to take away even a small portion of that in which a man enjoys the same right as he does in his freehold.

May I say, first, that air is generally erroneously mixed up with light, and no action can be maintained for air unless it be so interfered with as to amount to something like positive contamination, rendering it injurious to health.

The case of Brown and Others *v.* Collings may come under this head. The *locus in quo* was in the High Street, Bromley, Kent. (I have a rough sectional sketch of the facts.) From it you will see that the width across from window to obstruction is about 60 feet, and the windows themselves are between projecting wings. That labelled "A" was the one argued on, as others followed it. Old sheds of defendant's building gave light over an angle of 12 deg. The new buildings were proposed to go up to about 32 deg., still leaving 58 deg. of sky surface, whilst the loss of light would be 20 deg. An injunction was applied for, and an interim injunction granted in November 1896. The case came before Mr. Justice Romer in, I think, June 1897, but he would not decide, and asked for both sides to agree to have a report from an architect. This was done, and Mr. Gruning sent a report saying in brief that under 45 deg. no obstruction was as a rule caused, but in this case, owing to window at "A" being so recessed by back buildings, he fixed the angle of obstruction at 33 deg., and as defendant did not go so high he considered that plaintiff had no case. The judge accepted this report, and the defendant completed his building; but on appeal, heard in February 1899, this was reversed, the judges holding that no light previously enjoyed could be taken away, but hinting that the plaintiffs should not be too hard upon the defendant in letting him go up to a reasonable height. The result was that the latter was compelled to pull down one storey, leaving the angle of obstruction about 23 deg. or 24 deg. only. Thus it appears that even in a width across of 60 feet, with an existing sky surface of 78 deg., when there is no lateral light it may be possible for a dominant owner to maintain a right to all the light he has hitherto enjoyed. This is rather a startling possibility.

TESSERÆ.

Essentials in Painting.

A PICTURE necessarily consists of five actual and visible parts, and the only invisible parts are those ideas which so many people are fond of seeing in pictures. These ideal parts are not seen ten years after the first fashionable introduction of the picture, and are, consequently, of no real lasting value. Drawing, one; colour, two; composition or effect, three; style of handling or execution, four; poetic, natural, or any other kind of feeling, five. This is all, and the reason for this little list is to show in what way a deficiency affects a picture. Suppose we say a picture wants colour, or composition, or style of execution, then the reader can soon see and know what that means, and he can ascertain for himself whether such a defect is a loss or not. The fact is, that if it lacks one part, it loses just as a man is the worse man for the loss of an arm. And if the picture lacks two parts, it is like the man who has lost both arms, and so on for all the five chief qualities; the remaining part, whichever it is, is like the man's head, and when that, too, is removed, man and picture are of equal value.

The Roman Catacombs.

The mode in which the catacombs were constructed, and the changes which they underwent at different periods, is very clearly illustrated by the example of the catacomb of St. Callixtus, whose discovery is one of the most important which Di Rossi has made. The Christian proprietor secured a site of 250 feet frontage to the road and 100 feet depth from front to back. The staircase was sunk into the soil at one corner to a certain depth, and a gallery carried round three sides of the area, with another staircase at its further extremity; two other galleries also extended from front to back, and still four other galleries extended part of the way across, all on a rather higher level than the main passages, and therefore approached by an ascent of a few steps, and at the extremity of one of these shorter galleries three chambers were formed; all these passages and chambers were occupied by graves. Afterwards a fresh set of cubicula were formed opening out of the main passage, only on a rather lower level, and so approached by a descent of a few steps. At the same time another series of galleries stretching across the area was constructed at a lower level gained by another staircase. Still later an endeavour was made to reach a still lower level, possibly for the purpose of constructing a third set of galleries, but after sinking a certain number of steps the excavators found themselves below the stratum of tufa and in a stratum of friable pozzolana. They strengthened their wall with brick, and made a few graves in the walls of brick, but seem then to have abandoned the further progress of their work in the unsuitable stratum. The tiles and bricks used in this latest portion of the work bear the imperial stamp of Marcus Aurelius, and therefore must have been made between the years 160 and 180 A.D. Some time after precautions were taken to conceal the entrances to the cemetery by blocking up the staircases, and making entrances throughout an adjoining sandpit. Still later the cemetery was further enlarged, and made to communicate with others adjoining, and finally the galleries, which had been lined with dead in the graves made in their sides from top to bottom, were filled with earth, probably to conceal them and preserve them from violation in the Diocletian persecution. The discovery of this interesting cemetery is due to Di Rossi, who found part of an inscription on marble in the cellar of a vineyard, which he conjectured—rightly, as it turned out—to be part of the tomb of Pope Cornelius, which was known historically to be near the cemetery of St. Callixtus; at his suggestion the Pope purchased the vineyard and one adjoining, excavations were made, and were rewarded by this valuable result.

Seating in English Churches.

It seems the nave was formerly paved and entirely open, but gradually, dating from the sixteenth century, low benches were introduced, and later in that century we find in a few churches single pews or seats set up, but these appear, during that and the following century, to have been made movable. Weever says, "Many monuments are covered with seats or pews, made high and easy for parishioners to sit or sleep in, a fashion of no long continuance and worthy of reformation." But the fashion unfortunately increased, and in time even these high pews, as well as the solid open benches of earlier date, were gradually raised higher and higher by additional framing; and the proper direction of the pews, which even at first was preserved and made to face the altar, became disregarded, and by cutting away the middle framing, two pews, and more often benches, were thrown into one and cross seats were added. Thus came into existence the high square pews, with their many easy and comfortable nooks and corners, formed, as it would seem, for no other purpose than to encourage sleep.

Italian Campanili.

The campanili of the Italian churches are very frequently of brick. Most persons have seen drawings of the two leaning towers of Bologna, and these are but exaggerated examples of a failure in their execution, which they share with the steeples of Lübeck and the north of Germany. Like those, they never have any buttresses, and the consequence is, that they are constantly somewhat out of the pependicular. This absence of buttresses gives also a very similar outline to all of them, and the treatment in detail consisting, as it generally does, of arcading in slight relief in each of several stages in height, adds to this sameness. San Giacomo del Rialto, at Venice, is a fine example of the simple grandeur to which they sometimes attain. Here there are two very lofty stages, each arcaded with two sunk arches on each face and divided by a stone string-course. The arches have trefoiled cusping and labels moulded with a nail-head enrichment. The highest stage has a large open arch on each face, under which it was, no doubt, intended to place the bells, in the Italian fashion, where they can be seen as well as heard from below. In this example, as in some others, the great charm is the extreme simplicity of the whole design; but then there is nothing mean or paltry about it, the scale and the solidity of workmanship being both very great. In San Francesco, at Pisa, the fine brick steeple is engaged against the wall of the church, above the roof of which it rises in two lofty stages. The lower stage is pierced with a two-light window of two pointed arches under a round enclosing arch, and the upper by a three-light window, of similar description, in each case. The angles of the steeple are treated as pilasters, and a trefoiled corbel table is carried across between them over each stage. Occasionally these steeples are finished by low spires.

The Emperor Majorian and the Preservation of Roman Monuments.

The decay of Rome in the fifth century had gradually impaired the value of the public works. Specious petitions were continually addressed to the easy magistrates, which stated the want of stones or bricks for some necessary service; the fairest forms of architecture were rudely defaced for the sake of some paltry or pretended repairs, and the degenerate Romans, who converted the spoil to their own emolument, demolished with sacrilegious hands the labours of their ancestors. Majorian, who had often sighed over the desolation of the city, when he became Emperor, in 457, applied a severe remedy to the growing evil. He reserved to the prince and senate the sole cognisance of the extreme cases which might justify the destruction of an ancient edifice; imposed a fine of fifty pounds of gold (two thousand pounds sterling) on every magistrate who should presume to grant such illegal and scandalous license, and threatened to chastise the criminal obedience of the subordinate officers by a severe whipping and the amputation of both their hands. In the last instance the legislator might seem to forget the proportion of guilt and punishment, but his zeal arose from a generous principle, and Majorian was anxious to protect the monuments of those ages in which he would have desired and deserved to live.

Pedestals of Statues.

Pedestals were annexed to statues from the earliest periods, and among the Egyptians were sometimes so broad and high as to form a distinctive character of that national style. This people often ornamented them with hieroglyphics. The Greek artists wrote their names upon them, but their predecessors, and their faithful imitators, the Etruscans, inscribed the legs and thighs, a barbarism which injured the effect and harmony of the figure. The name of the statuary does not always imply the original sculptor, for copyists put their own names. The Greeks said that a statue fell from heaven when they did not know the sculptor's name. The artists added also the names of the persons represented, but definite conclusions must not be formed from either. Ancient statues of the first merit are nameless, and Dion Chrysostom, who lived in the time of Trajan, reproaches the Greeks with inscribing ancient statues. We find too from Plutarch that in flattery they put the name of Antony to two colossal statues of Attalus and Eumenes. The Greek bases were in general cubic or round, nor are the triangular bases occurring in Musea feet of candelabra, as affirmed, but altars used in the "inferiæ," or sacrifices for the dead. Upon monuments the bases of statues are ornamented with garlands. Winckelmann says that bases were allegorical, and quotes one belonging to a statue of Protesilaus, formed like the prow of a ship, for which assertion he quotes Philostratus. The custom of inscribing the bases was not universal. In the decline of sculpture especially, when the statues were elevated, tablets were suspended on the bases, which tablets were inscribed, in letters of minium, with the names of the heroes whom they represented, their ancestors, and the wars or exploits which had rendered them celebrated. Hence came our modern long inscriptions.

Colour and Triumph.

It is curious and instructive to mark how nations in the supremacy of their wealth and glory have sung, as it were, their triumphs in the full chorus of colour. The Pharaohs in Egypt decorated the palace of imperial pomp, and the temple for sacred worship, with prismatic hues as the language of ecstasy and triumph. The Moors in Cairo and Granada sounded in turn their jubilees in tones pitched in the same high key of exultation. Leo and Julius in like manner in Italy built churches rich in resplendent marbles, and made the painted fresco subservient to religious worship and stately magnificence. But when glory departs from a nation, the bright robes in which she clothed her splendour grow faded and sullied. With tarnished honour comes a deadened colour; crimson, the trumpet note of valour, turns pallid with defeat, and instead of joy in gay attire is the sackcloth of mourning. In Upper Egypt the sand of the desert has swept its effacing flood over sculpture, column and painting. At Cairo the gilded crescent fades against the sky; in Andalusia the Alhambra has long been whitewashed, and in like manner throughout Italy the jewelled marble has been stript from the denuded monument; frescoes, once the very triumph of colour, are pallid and crumbling, and the land of the south, once clad in almost eastern magnificence, now stricken with poverty, finds her garments tarnished, tattered and threadbare. Italy also was once emphatically the land of colour—not the colour of rude barbaric grandeur, but the language of subtle refinement, the overflow of exuberant delight, the rapture of a devotion which sought the harmony and the fervour of the skies. Its expression was manifold as the intent and emotion were diversified. In Venice colour gemmed as with ruby and sapphire and emerald became worldly pomp and senatorial dignity. Then again in the convent art of Angelico it lost all taint and corruption of earth, it became pure as the elements, holy and without shadow of sin as when light was first divided from darkness; and thus in these works angels float down from heaven on the sunbeam, and their robes span the sky as in rainbow glory. And this glory faded from Italy when darkness came upon the land and confusion was thick gathering.

Unsatisfied Longing as a Test of Art.

To satisfy the mind, any object presented to it ought to be infinite. It should stimulate the imagination; should give room for a play of thought and exercise of active reason; there should be scope for ranging into newly-discovered fields of invention—for achieving something ourselves, not merely for observing what has been achieved by others. The spectator should be made to take part in the work of creation. In Grecian architecture this is not possible. He may measure and compare and criticise the exact adjustment of distances, the accurate flow of curves, the perfect regularity of angles and proportions; but criticism and acquiescence is all which is left to him. He admires, but passively; and the work of measurement is soon exhausted, and nothing remains but to surrender himself to the general impression. It is thus that a perfect object of beauty, whether in a landscape or a work of art, lies upon the mind like a load. It oppresses with its very beauty. Its very exquisiteness and perfection, the absence of any blot, of anything to be completed or amended, fascinate us with a species of luxurious indolence, in acutely sensitive minds amounting at times almost to painfulness. Perhaps if we could enter into and understand the mysteries of the great work of divine art, the physical creation itself, this would account for the remarkable fact that it is thus left for the most part imperfect. Its outlines are full of grace, its forms germinate into beauty; but everywhere there are spots and fractures—something which the human mind can fill up, or which the human hand may strive to mend. Its vegetation spreads out into a thousand luxurious curves, and yet we cull and pick the leaf or flower which defies improvement. Its colours are blended and softened in a tissue of unimaginable delicacy, and yet a painter can throw over them all a tint which mellows and improves them. Its sounds are soft and clear, and nothing in art can reach their depth and power of expression; but they are not harmonised into concerts or distinguished by rhyme. And hence the seeming problem that, while nature is more perfect than art, and possesses a touch and imagination and delicacy of perception beyond what man can ever reach, still art is the improvement of nature, working upon her grand sketches and masterly unfinished models, in order more completely to realise the grandeur and charm of her designs.

GENERAL.

The Liverpool Architectural Society will hold the first members' meeting at the Law Library, 41 Castle Street, on Monday, the 17th inst., at 6 P.M., when a paper will be read by Mr. G. Hastwell Grayson, M.A., A R.I.B.A., the subject being "Skyline."

The Board of Education has decided to open the Exhibition of Modern Illustration on Monday, January 7 next, in the galleries of the Indian section of the Victoria and Albert Museum, South Kensington. A private view will be held on Saturday, January 5.

The Louvre has been enriched by two small works. The first is a "Head of Christ," by Quentin Matsys; the second, "The Raising of Lazarus," by Rubens.

The First Commissioner of Works has denied the report that the Marble Arch was to be pulled down and re-erected elsewhere.

Professor A. S. Wilkins has lectured in the Art Museum, Manchester, on Ancient Athens, which he described as the birthplace of beauty, truth and freedom.

A Part of the Watling Street or Via Vitellina of antiquarians has just been unearthed alongside the high road from London between the Packhorse and the Horse and Jockey inns, in the parish of Kensworth, near Dunstable, Bedfordshire.

The Excavations of the Roman remains at Silchester have been brought to a close for the present year, and the committee are pleased with the season's work. Among the interesting relics recovered were tessellated floors, a special piece of Mosaic pavement with a figure representing a dolphin, and upwards of 1,000 pots of different size and shape.

The Exhibition of the works of the late Sir F. W. Burton is now open in the National Gallery, Dublin. Over 100 examples, including paintings, drawings, studies, &c, are shown.

Mr. James Buckley Wilson, architect, of Swansea, died last week in his fifty-fourth year. Mr. Wilson was in partnership with Mr. Glendinning Moxham, and the firm had prepared plans for many buildings in South Wales, including the Swansea Market Hall.

The London County Council on Tuesday adopted the resolution that about 31 acres should be acquired at Norbury, Surrey, at the rate of 600*l.* per acre, for the purpose of erecting cottage dwellings.

At a Meeting of the election committee of the Institute of Sanitary Engineers (Incorporated) held on the 5th inst. the following were elected:—*Fellow*—T. E. Fellows, Willenhall; *Member*—A. W. Pelling, London; *Associate*—A. E. Kinder, Blackpool.

A Meeting of the Glasgow Technical College Architectural Craftsmen's Society was held on the 7th inst., when a paper was read by Mr. Thomas S. Fraser on "Some Principles of Design." Mr. Fraser stated that the paper was written to help craftsmen to intelligently appreciate the beauties of architecture. Artistic design is the use of architectural precedent having regard to certain principles, viz. fitness of application, expression, proportion, repetition, variety, symmetry, gradation and contrast—these principles being applied with the designer's individualism. Mr. Fraser's explanations and illustrations of these principles were lucidly given, and the usual brisk discussion opened by Mr. C. Ernest Monro followed.

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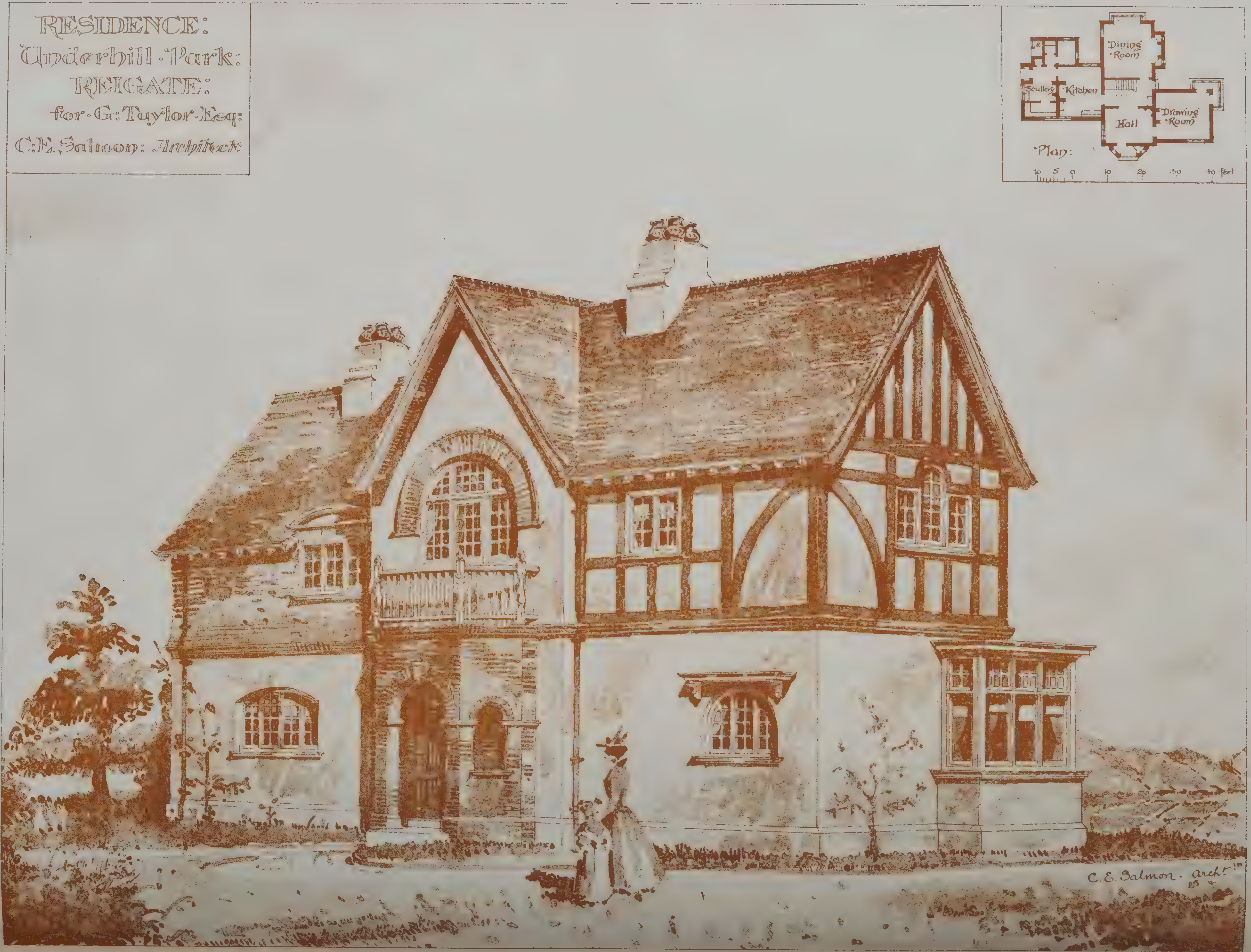

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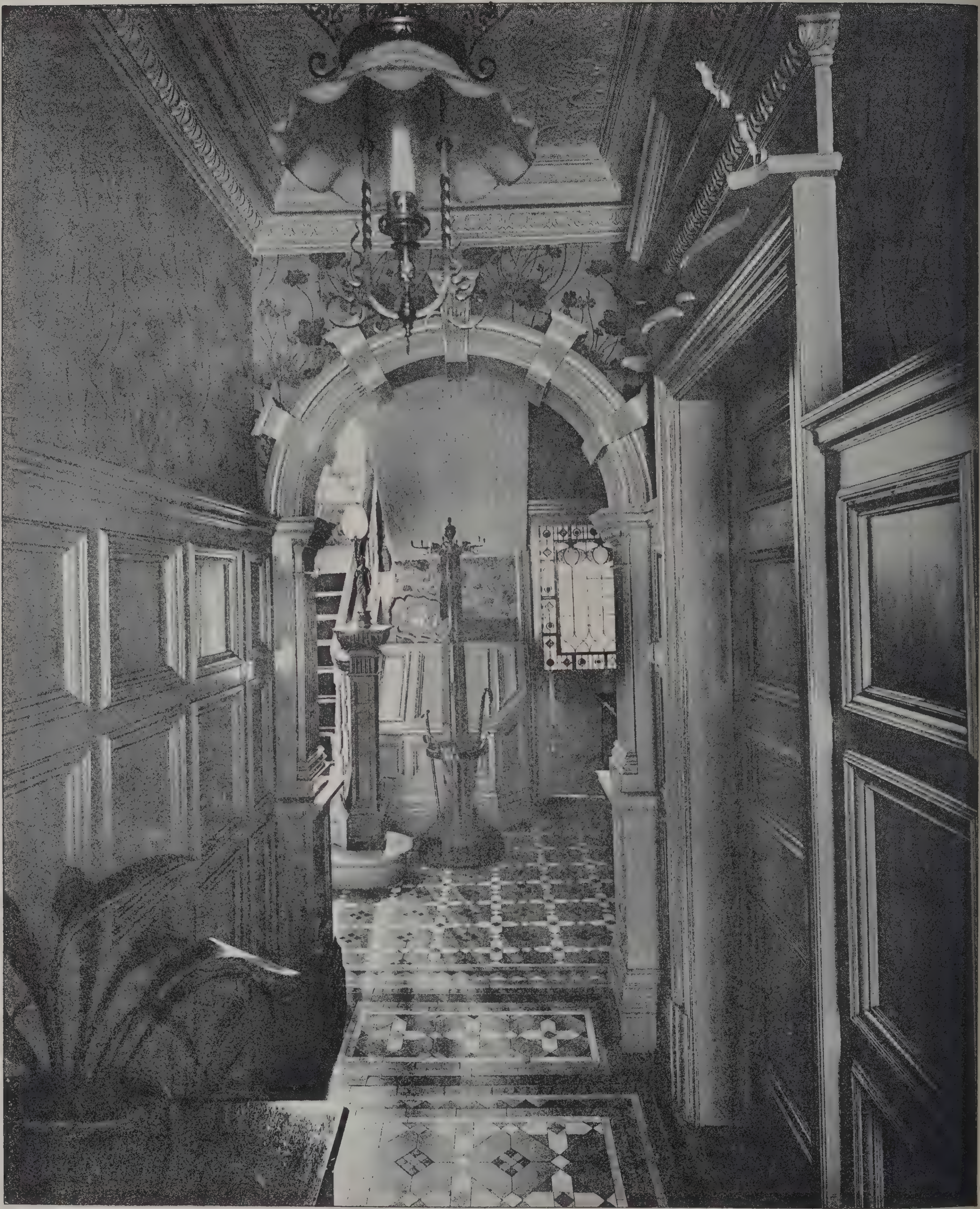

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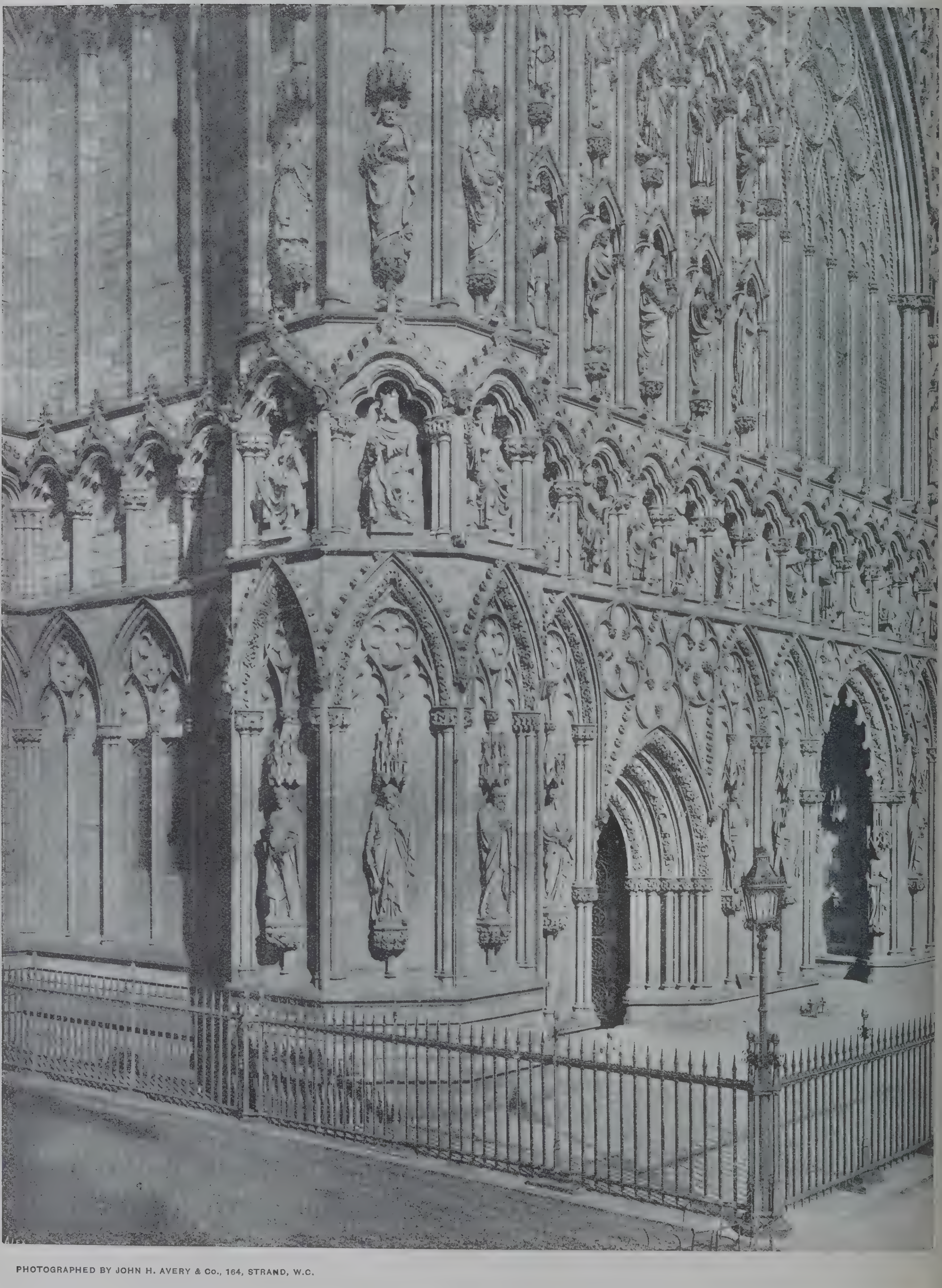

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CATHEDRAL SERIES, No. 309.—LICHFIELD: DETAIL OF CORNER OF FRONT.

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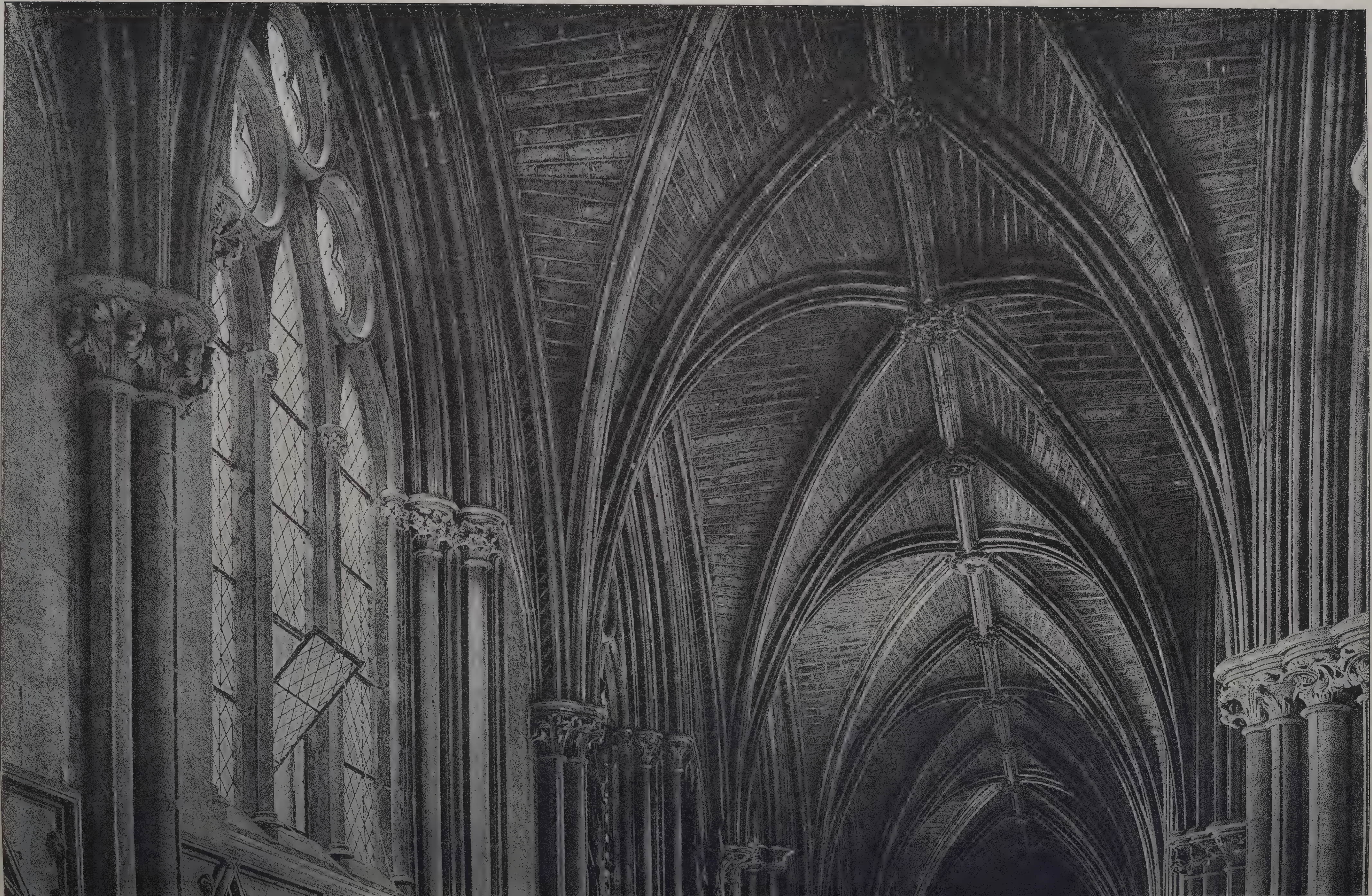

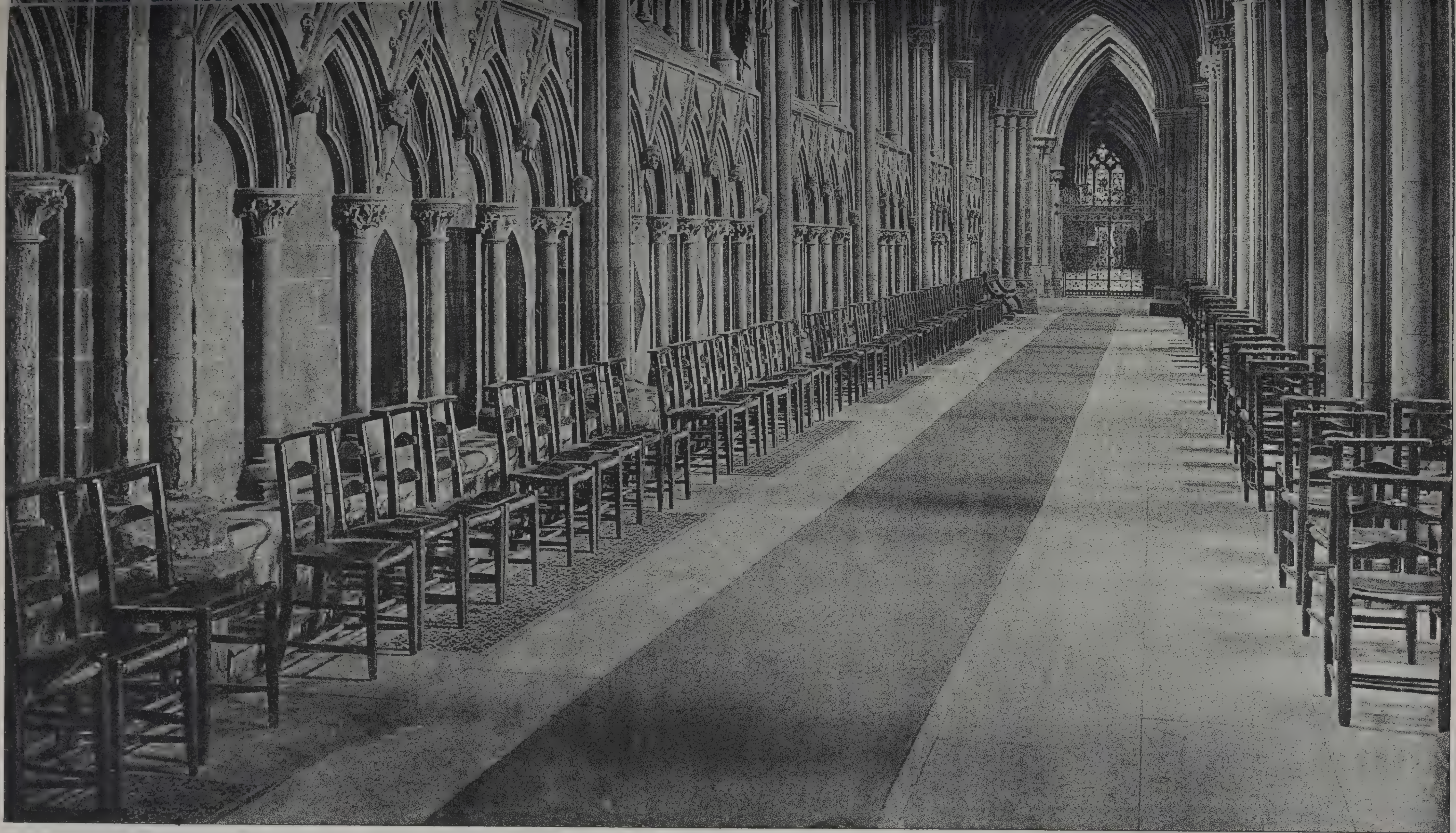

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CATHEDRAL SERIES, No. 308.—LICHFIELD: NORTH NAVE AISLE, LOOKING EAST.

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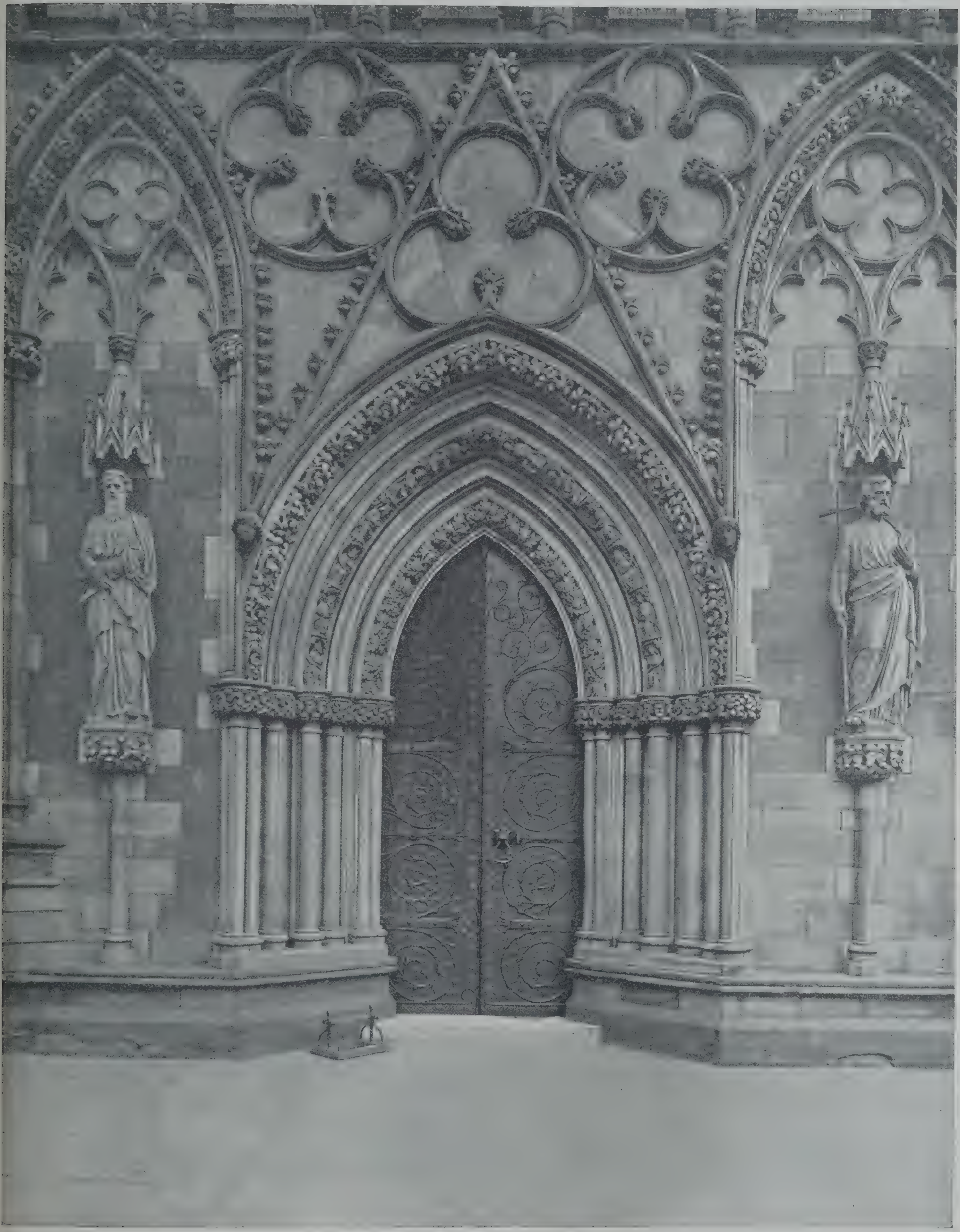

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CATHEDRAL SERIES, No. 310.—LICHFIELD: ONE OF THE SMALLER WEST DOORS.

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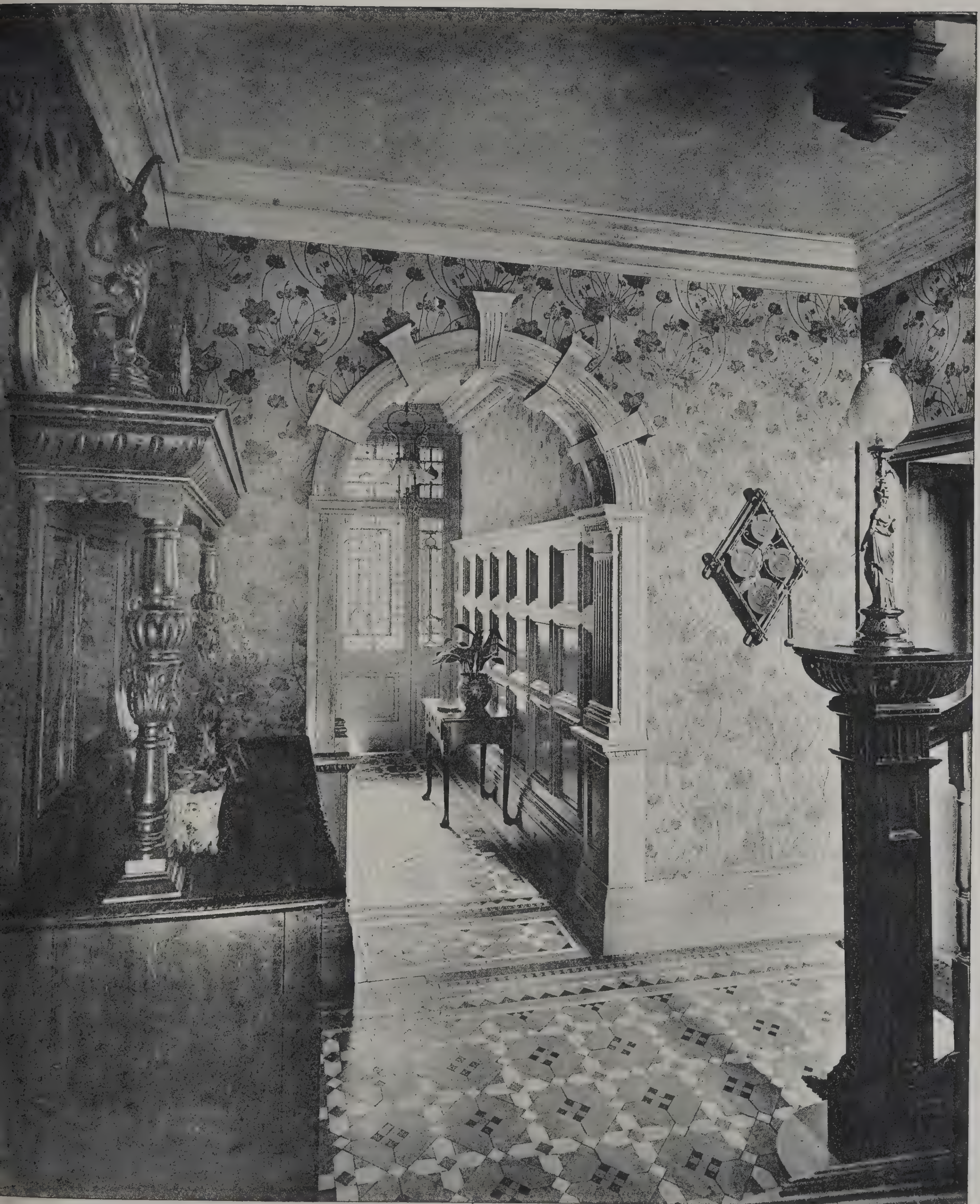

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YORK CITY AND COUNTY BANK, HARTLEPOOL: THE INNER HALL.

W. HARGREAVES BOURNE, A.R.I.B.A., Architect.

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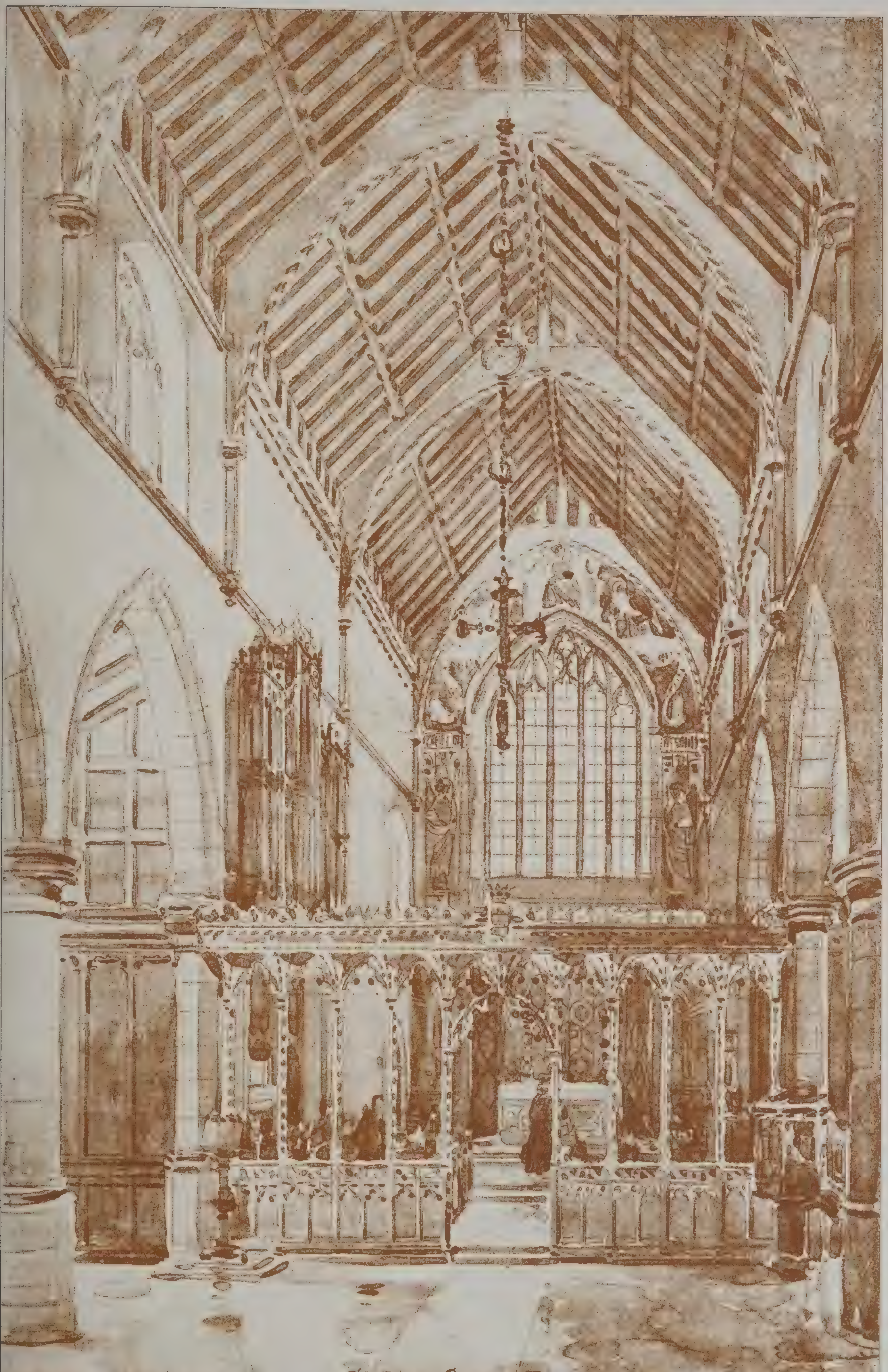

HERBERT. C. INGRAM. ARCHITECT.
9. IRONMONGER LANE, LONDON. E.C.

St PAULS CHURCH BERMONDSEY.
PROPOSED NEW CHANCEL.

F. T. Jones Delt.

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The Architect.

THE WEEK.

HE decisions of the Higher Courts in appeal cases iich are brought before them, and arising out of the orkmen's Compensation Act, must be unsatisfactory to ost of the judges of the County Courts. It is natural for judge to feel some pride when he finds that one of his cisions, which was reversed by the Court of Appeal, has en confirmed in the House of Lords. But the delay iich is necessary in following out appeals must often use misery to the workmen who were litigants, for no mpensation is allowed to be paid until there is an end to possible proceedings. Judge Bradbury, in the Bury ounty Court, called attention on Monday to the extra-dinary state of affairs which had arisen, and which he ought to be almost unique in the legal history of the untry. In all the cases tried last week before the House Lords the decisions of the Court of Appeal on most vital ints were reversed. The County Courts had, however, en guided by the decisions of the Court of Appeal, and doing so had been acting contrary to the spirit of the ct. Moreover, Judge Bradbury believed that in ndreds of cases the compensation obtainable by the Act d been lost. We suppose it might also be said that in any cases where contractors had been mulcted there was miscarriage of justice. The unlucky Act is causing neral injustice, and employers are no less eager than orkmen to see the Compensation Act amended.

A remarkable case came before Mr. Justice Kennedy d Mr. Justice Darling sitting as a Divisional Court on onday last. On June 7, 1898, Messrs. John Paterson, mited, of Glasgow, entered into a contract with the Cor-ration of Swansea to construct a reservoir and other orks connected therewith for the sum of 255,747*l*. In e contract deed it was stated that during the progress of e works advances were to be made by the Corporation to e contractors at the rate of 80 per cent. of the value of e work executed. The contractors claimed to have in-uded in the valuation of the work done for the irpose of advances certain temporary works which ere necessary for the carrying out of the operations, ch as workmen's huts and houses, workshops, stores, fices, stables, railway lines, sidings and junctions, plant, ., dressing and preparing stone for use in the permanent orks. These works had caused an aggregate outlay of ,000*l*. The contractors claimed to be entitled to an vance in respect of these materials, but the engineers of e Corporation had refused to certify for any advances, d therefore the contractors could not get any money. e question was one purely on the construction of the ntract and the words in clause 56, "advances on the lue of the work executed." Mr. George Hill, consult-g engineer to the Corporation, was arbitrator, and he ited a special case for the opinion of the Court. It was entioned by counsel that whichever way the Court decided, e case would have no effect on the ultimate liability of e Corporation, as this was a contract for a definite sum, d their liability could not exceed that sum. After hearing unsel their lordships held that the contractors' claim uld not be sustained, and that they were not entitled to y advances for temporary works constructed for the pur-se of carrying out the contract.

Mr. Waterhouse, R.A., has protested in the *Times* ainst the contemplated extension of the Land Registry fices in Lincoln's Inn Fields by building over the fore-urt to the extent of 28 feet beyond the general building e. The London Building Act is inoperative in such a se, for the Land Registry Office can be considered "as sted in and in the occupation of a department of Her ajesty's Government." But the owners of the other uses on the south side are likely to be incited to utilise eir forecourts, and the value of the central space, which s so much picturesque and historical interest, would then diminished. If the London County Council will be m they will not approve of any plans for such extension. e question is a very important one. In several streets of London forecourts have been built over with the approval of the local authorities and the Council. In that way ground which is not always laid out in a picturesque manner is utilised to the profit of the owners, and often to the convenience of people living in the neighbourhood. But Lincoln's Inn Fields is an exceptional case, and when the rights of owners of the surrounding property were purchased it was of course considered that the forecourts would be left as they had been since the houses were erected.

Winckelmann was born in Sandal on December 9, 1717, and the anniversary was celebrated in many parts of Germany. At Bonn Dr. Lehan delivered an address on the Mithras, or Sun Worship, of which there are several memorials in Germany, especially in the country near the Rhine. Originally it came from Persia, and was connected with the myth of the contest between Ahriman and Ormuzed, that is, the principles of good and evil, or the phenomena of light and darkness. There was no doubt that at one time the worship was greatly followed in Rome and the provinces, and many were the conflicts between its representatives and Christian teachers. By the Roman soldiers the cult was introduced in Germany. A large number of ancient examples of sculpture represent one or other of the numerous phases of the belief, and it may be that the Apollo myth is no more than a development of it. Another lecture was given by Professor Löscheke upon the various representations of Hercules in Greek sculpture.

It is now evident the Grand Palais in the Champs-Elysées is not adapted for the Salon exhibitions. The building was designed to meet the exigencies of the International Exhibition, which are not altogether identical with those of an annual exhibition. The adaptation will be costly, and the question is now being asked, Where is the money to come from? The French Government is not likely to bear the expense and the exchequer of the Society of Artists is empty. Lovers of art will no doubt come forward and advance any money which may be needed by the Artists. The liabilities of the Society will in any case be increased, and unless the next Salon is more attractive than those of recent years it cannot be expected there will be many more visitors who will pass through the turnstiles. What course to follow is accordingly much debated. M. Jean Paul Laurens is said to be of opinion that the committees must be more rigorous in accepting pictures, and that a smaller number of good works is preferable to filling every foot of the walls with paintings of which many are of an inferior value; but there are compassionate members on the committees who believe that the exclusion of all works which are not of a high standard would cause privations to many worthy people. It was in the hope of benefiting a number of artists that a large sum was laid out on a temporary building for the Salon of this year. If there could be any certainty about the production of masterpieces in sufficient number to occupy at least one-half of the walls, the committee of selection would be likely to agree that the exhibition should contain no other works; but experience shows that inspiration does not always come when it is most needed. There is not even an assurance that the Salon of 1901 will be of more than average merit.

The cathedral of Notre-Dame de la Garde, Marseilles, is by itself sufficient to keep the name of Henri-Antoine Revoil from oblivion. It is to be doubted whether a more grand example of the neo-Romanesque of France is to be found. In arrangement it recalls a Gothic building, but it is more dependent for effect on its architectural lines than on sculpture. The able architect of that building has passed away. In the south of France he was probably the most renowned architect. He was largely engaged under the Government in restorations, and on his deathbed he received the intelligence, which is always most gratifying to a Frenchman, that he had been raised to the dignity of commander of the Legion of Honour. M. Revoil was the architect of many other churches in Provence and Languedoc, but none of them could be considered as costly as the Marseilles cathedral. It may be mentioned that his surviving son is the French Minister in Morocco. His eldest son, who died five years ago, was an explorer among the Somalis.

ANTICIPATION AND REALISATION.

IN the early years of the century which is about to close Prince Hoare regarded it as his duty to urge the British Government to show a more generous appreciation of the fine arts. The time did not seem opportune. England was then engaged in the terrible struggle with Napoleon, and the demands on the public for money to pay war expenses, including subsidies to foreign Governments, would have caused the ruin of any other State. To advocate that money should be laid out on the erection of public buildings and the adornment of those which then existed by costly paintings and sculpture, must in the eyes of the majority of people have appeared unbecoming on the part of a loyal citizen. But Hoare was able to obtain the favour of the Prince Regent, to whom, as he said, "the arts look up as their natural protector." It may have inspired confidence in timorous minds when it was found that the representative of the king was so assured of the success of the campaigns, he was able to bestow attention on dilettanteism.

Prince Hoare's position was somewhat uncertain, for he was at once an artist and an amateur, but he was well qualified to give an opinion on subjects relating to the fine arts. He was the son of William Hoare, one of the foundation members of the Royal Academy. Prince Hoare received his first instruction in art from his father; he studied in the schools of the Academy, and became a pupil of Raphael Mengs in Rome. It was anticipated that after such a training Hoare would extend the reputation of the British School of Painting; but the pictures he exhibited at the Royal Academy were not considered remarkable, and after a few years' trial he abandoned painting for literature. He did not sever his connection with the Academy, for he was appointed Foreign Corresponding Secretary in 1789. His varied experience enabled him to be a link between artists and amateurs, and it was not presumption on his part to assume the office of a guide to the nation.

Art at that time depended on the patronage of people who were incompetent judges. Hoare employed the remark which had been made about the contemporary drama, viz. that all powers and talents, however excellent in themselves, when applied to the sole purpose of amusing the idle and the vain become contemptible. But what was to be expected when custom had so long given the preference to foreign artists for the majority of important works? In the days when Hoare was writing, John Flaxman, who as an invalid was of a gentle and retiring disposition without any wish to grumble, was compelled to point out that from the time of Charles II. the succession of favourite sculptors was to be traced through a long list of foreign names, and a strong prepossession in their favour continued down to the beginning of the nineteenth century. A few years before Hoare made his appeal, one of the universities, having resolved to erect a statue of Pitt, proposed to invite a Venetian sculptor to come to England and accept the commission, although little was known about his works. The first encouragement given to English sculptors was in the reign of George III. Painting was more generally patronised, but the prejudice which was expressed in the last century by Steele or Addison, when it was said a painter was a "mechanick," still operated on the public mind. "So little," says Hoare, "have the distinct provinces of painting been hitherto made the subject of attention by the discriminating classes of society, that its mental part and its mechanical continue to be spoken of under the same denomination, and a painter is a term equally expressive of the man who fills the mind with the awful exhibitions of the Sistine Chapel, and of him who covers the wainscot or the walls of our houses to secure them from the injuries of smoke and rain." The notion of gentility of that time would not allow a man belonging to the liberal class to become a painter. It was not extraordinary that an English gentleman should hesitate before he allowed his son to follow one of the arts. If he became a painter he must either devote himself to portraiture, which was only a subordinate art, or to historical painting, to which all the world would be indifferent. In contrast to the English neglect of art the contemporary plan adopted in France was described. Once in ten years it was then the custom to have a competition between the foremost painters and sculptors. Whoever obtained the highest prize was employed by the State and received honours and substantial rewards. But at the time Napoleon was in power, and he was willing to patronise any kind of ability he could turn to account for his own benefit.

To exemplify the kinds of rewards which awaited the English artist who had lofty aspirations, Hoare referred to a few instances which were familiar to his readers. One was James Barry, R.A. His frailties were excusable, for it was impossible for him, owing to his needy circumstances, to bring all his powers into adequate exercise. His works, as Hoare said, were produced under the pressure of wanton neglect and obvious public inutility, aggravated by the conscious sense of the worth of his own mind and of the high and virtuous study to which he had committed it. Barry was a martyr to high art, but he was not alone in that age, and with such examples it is not remarkable that artists endeavoured to follow the road that alone led to prosperity. High art was identified with Scriptural, Greek and Roman subjects, or with later historic scenes if they were represented by figures clad in classical costumes. Benjamin West, however, introduced the plan of painting modern historical scenes in modern costumes. But financially the innovation was not of much advantage. Fortunately for the painter, George III. became his admirer, and paid liberal prices for all works purchased for the royal collection. The public acted differently. According to Hoare, when West completed his *Death of Nelson*, so many people came to see it at the artist's house the street was blocked for several days. But among the crowds attending the gratuitous exhibition there was not one who made an offer to purchase the picture. Yet no subject could be painted which possessed a more intense interest for the English people of the time.

The apathy of those who could afford to purchase so national a work is the more remarkable if contrasted with the new zeal which was shown in support of sculpture. Not only England, but the Colonies, were intent on the acquisition of statues of the heroes of the war. The Royal Academicians were entrusted with the selection of works for Jamaica, Madras, and other places. The commissions were so numerous that a Committee of Taste was constituted, consisting principally of amateurs, with the President of the Academy, in order to confer with the sculptors and to superintend the memorials they produced. A supplementary body was also nominated, the members being two sculptors, two painters and two architects, all Academicians, in addition to some members of the Committee of Taste, with the object of selecting the positions in the cathedrals where the statues were to be placed. It cannot be said that the committees were altogether successful, but without their control we might possess still more unsatisfactory figures. It was also proposed to transform that part of Westminster which was contiguous to the Abbey, where so much sculpture was to be introduced, and the Committee of Taste was supposed to have the direction of the project. For reasons which have never been explained, the designs received were not taken up with that earnestness which is necessary in a costly work of construction.

As we have said, the time was not opportune to advocate the creation of a new spirit in the minds of public bodies and of individuals for the purpose of promoting art. Hoare, knowing the obstacles, in his recommendations endeavoured to descend as low as possible in order to accommodate his ideas to the dulness which was then prevalent. He suggested, for example, that it would be well to have the halls of the City Companies decorated with paintings illustrative of the history of the guild. The sight of them, he considered, would impress neophytes with respect on admission to the august assemblies, they would entertain the eye and enliven the fancy on festive occasions, and they might be, in addition, a source of profit, for if visitors were not compelled to pay to see them gratuitous contributions could be accepted. The Guildhall also offered, he said, another large field for the display of paintings. Churches likewise would gain if suitable pictures were introduced, and, besides, if portraits were allowed of parishioners their representatives would be sure to be willing to pay the cost of the reliefs. Palaces and noblemen's houses were another opening for decoration. It was pointed out that in the employment of the arts England was behind Russia, for in

1802 the Czar decreed that every year designs in painting and sculpture taken from the history of Russia should be prepared in order to immortalise the memory of illustrious warriors, and the pictures, statues and busts should be placed in a gallery devoted to monuments of national merit.

In order to attain the end he had in view, but which he was not destined to see, Hoare proposed that some official establishment should be created, under the sanction of Parliament and amenable to its control, with the object of securing the due direction of the arts of design to public utility, by the continual employment of British artists on works best suited to that end, under the guidance of professional men, subjected to such regulations as might be proposed. In that way it was hoped the aid of artists and the interests of patrons would be secured.

At the end of the century it is allowable to ask how far Prince Hoare's anticipations have been realised. George III. cannot be said to have had a successor who emulated his liberality in the commissioning of works of art. The Prince Regent, who was supposed to be the natural protector of the arts, during his ten years' reign had too many public and domestic cares to become the munificent patron which so many flatterers had hoped for. Nor can it be said that Ministers of State or great ecclesiastics were able to accomplish all that Hoare had set out on his programme. It must be admitted, however, that his words were not without effect. The effort to make the walls of the Houses of Parliament eloquent by frescoes was a testimony to the influence of Prince Hoare which was exercised long after he had passed away. The City Companies on whom he relied have not shown much enthusiasm for art, and in churches the appearance of paintings on the walls is believed to be not entirely orthodox. In exhibitions high art is not considered to afford much pleasure. Yet few will deny that the condition of art at the close of the century is in a very different state from what it was in the beginning, when Hoare was making his appeal to men in order that they might accept art as an object of national concern, in which success was to be prized as if it were a victory on a battle-field. Now as then, the country has to be engaged in costly wars. But it would be wrong to assume that the arts of peace are to be ignored on that account. If the voice of one individual moved many to believe that artists were more than mechanics, we may hope that the successors of Prince Hoare will be equally efficacious at the beginning of the coming century.

AN ATHENIAN PARLIAMENT.

An ancient Athenian if he could have visited Westminster during the short session which came to a close on Saturday would have been surprised, if not gratified, at many of the occurrences. Considering how large was the amount of money to be voted, it would seem to him that in spite of occasional "scenes" in the House there was too much expedition in the proceedings. Over infinitely smaller sums orators in Athens would have made a reputation, and the fierce democracy would, moreover, have derived many days of enjoyment. The personal attacks on Ministers would have brought similar conflicts to his recollection, and he might look upon the presence of a Speaker who was omnipotent in restraining the vocabulary of passion as not altogether advantageous. Orations were in the old days planned in the most architecturesque manner, but the stately arrangements were occasionally interrupted in Athens by words and phrases which were as racy as any to be heard in the Fish Market.

But what would amaze the Athenian most would be the spectacle in the chamber where the proceedings took place. If he remembered the thousands of citizens who used to assemble over some trumpery matter which was supposed to be connected with the honour of Athens, it would seem to him incredible that only a few hundreds of members were present to discuss momentous events and to sanction the expenditure of immense sums of money, and that all the legislators were contained in one hall of limited dimensions. In Athens it is extremely doubtful whether the great assemblies could be considered as having ever met in any covered place. Apart from the absence of historical evidence on the subject, it is unlikely that the Athenian builders were able to roof in a sufficient area to cover so many people as possessed the right to vote. They could, of course, construct a portico or colonnade where speakers and strangers would find shelter while the auditors remained in the open air, but apparently an arrangement of that sort was not adopted. Of what kind, then, were the famous assemblies in which those orators were heard, "whose resistless eloquence," as Milton says—

> Wielded at will that fierce democratie,
> Shook the arsenal, and fulmined over Greece
> To Macedon and Artaxerxes's throne?

But in the first place a few words are necessary to explain why so much talk was necessary. It must be borne in mind that the physical configuration of Greece was not only favourable to the existence of independent states, each of which held, as it were, an elevated oasis in a stony desert, but there were also subdivisions of the land which promoted the creation of tribes and parties. The Athenians at one time consisted of four tribes; afterwards there were ten. Each would have its special interests, and the discussion of them in course of time led to the oratorical exhibitions. From what we learn it may also be concluded that the representatives of different occupations formed themselves into separate divisions, and thus we read of priests, husbandmen, craftsmen and other workmen as if they were castes. But the rigid divisions that were found in India could not find approval with the Greeks. The tribes and trades could intermarry, and in that way a more general interest was created. It is likewise supposed that at one time there was a division into three classes, nobles, landowners, and lastly, the people who depended on them. Even when the ten tribes were constituted there was no abolition of ancient corporations or clans, and therefore an Athenian citizen could be claimed as belonging to several recognised divisions, all of which had special interests, in the consideration of which it was necessary to take a part. We may assume that the sculptured figures in the Panathenaic Procession, although to us only a collection of graceful youths and maidens, was formed of representatives of various tribes or demi, for it is well known that each of these bodies possessed certain officers whose duty it was to make arrangements to insure that the members might take their legitimate share in the public spectacles. Every tribe possessed lands, and from statements it would appear as if the superintendents of public works were selected by citizens who possessed a more particular knowledge of the circumstances.

As a result a distinction was made between business in which the whole of the Athenians possessed an interest and business which was mainly tribal. Meetings to consider the first class were called "ecclesiæ," from which our word "ecclesiastical" is derived, while the others were known as "agorai." It is remarkable that the latter word was originally the name for all assemblies, as if there was no distinction between what was tribal and what was public, and the rendezvous for assembling in, which was generally the market-place, was known as the "agora." In Athens the market-place became too small to hold all the citizens, and then the assemblies were held at the Pnyx, of which the site was near the agora. The origin of the name is uncertain. The ground on one side was semicircular, and as it formed part of the slope of a hill large stones were used to make the Pnyx comparatively level. The area is supposed to be about 12,000 square yards. The citizens must have stood or sat on the ground, for there were no seats with the exception of a few wooden benches. As covering was absent the heat of the sun was oppressive, so most of the deliberations took place in the early morning. On the northern side there was a platform 10 or 11 feet high cut out of the rock and approached by eight steps. This should be the bema so renowned in history, but it is doubtful whether it was used by Demosthenes, Pericles and the other great orators. According to Plutarch the sea was to be observed from the bema, but as that is no longer possible it is imagined the original bema must have been elsewhere in the Pnyx. The spot is, however, held to be sacred, and it is believed that the more ancient "agora" adjoined it. It is known that a senate house was also in the neighbourhood (the members did not exceed fifty-five), and a record office in which the ancient laws and edicts engraved on columns were deposited. There were too statues of heroes whose names were borne by the ten tribes. The buildings were in the nature of offices, but the great assemblies which formed the motor-force of Attica met only in the roughly paved Pnyx and agora. As Athens grew and the population increased the Pnyx was found to be too restricted for the assemblies, and the theatre of Dionysos or Bacchus, another uncovered space, was therefore frequently used. Special assemblies were from time to time held in other parts of Athens. The old traditions, however, exercised influence, for the preference was to hold the meetings in market-places.

The people were summoned to the assemblies either by criers or by proclamation. The authority to hold a meeting was usually given by some body such as the Prytanes and Senate. But we know that Pericles of his own accord convened meetings regardless of any other authority. He also introduced the custom of paying the poorer citizens for attendance. It was sometimes difficult to compel the Athenians to attend the Pnyx. The plan was therefore adopted of driving people there who were found loitering in the streets. A rope was held by a couple of slaves, and whenever they saw a few men together they rushed towards them, and all who were marked by the vermilion with which the rope was painted were liable to fines. Before the business began the Pnyx was generally purified by a priest, and sacrifice was offered: the favourite victims of the Athenians on such occasions were young pigs.

The duties entrusted to the people were often momentous. The Senate could propose measures relating to peace and war, revenue, new laws, foreign affairs, naval affairs and religious affairs; but the determination rested on the votes of the audience. But municipal business was also transacted. For instance, everything relating to public works had to be sanctioned by the citizens. It was impossible to construct or repair a road, a temple, a theatre, or other public edifices, to deepen a harbour, to strengthen a fortification without obtaining an approving vote. The architects of the projected works were allowed to appear and explain their plans and estimates. An architect who wished to succeed required therefore some experience in oratory, in order to make an impression on the assembly. It is possible facility in speaking was overprized, for while the names of many architects are unknown, there is a record of Philo, who described his design for the arsenal with so much grace, he was complimented on his eloquence as well as on his architectural skill. It was necessary, however, for all artists who appeared to keep within their special province. Phidias was heard with attention when he proposed that a statue of Athené should be made of marble rather than of ivory, because the figure could acquire a more enduring polish. But as soon as he had recommended the adoption of marble for its economy, he was ordered to be silent, because financial questions belonged exclusively to the assembly, and it was felt that the dignity of the protectress of Athens was not to be dependent on petty economy. It did not necessarily follow that the proposal of a scheme and voting on it occurred in succession. Debates were slow before a conclusion was reached. From time to time there were delays which suggest a resemblance between an Athenian assembly and our own Parliament. Thus, when Philip was about to invade Attica it was proposed to have the walls of Athens repaired. The passing of the measure was not accomplished expeditiously, and the assembly was dissolved. In the next year the war had commenced, and all the money that could be raised was required to meet the expenses. It was then too late to attend to the reparation of the walls. But superintendents had been appointed, although no definite arrangements about building could be completed. The law of Athens was strict about the rendering of accounts of all moneys spent on public works, and as the superintendents were not able to perform their duty in that respect, at a subsequent time suspicion arose against them for failing to obtain an audit of their accounts. And here it may be mentioned that all classes of officials were supposed to give detailed accounts of the public moneys which passed through their hands. Pericles himself was asked at one assembly to hand in his accounts. Generals engaged on expeditions, magistrates, and, in fact, everyone holding an important office, were subjected to the same law. No money could be taken from the treasury without the sanction of one of the assemblies.

In many ways the Athenian assembly bore an analogy to such an institution as the House of Commons. But the Athenians had not the checks which in England are represented by the Lords and the Sovereign. The English Parliament has rarely formed itself into a tribunal for a trial on the issue of which life and death depended. In Athens State trials were undertaken with as little hesitation as would be required in the passing of a municipal law. Pericles is supposed to have received his commission from the people to undertake the Parthenon and various other public buildings. But when he was suspected of allowing his own portrait to appear among the figures on the Parthenon he was treated as an offender against the State by the same people. Phidias likewise was made to suffer as the agent of Pericles, and as well as can be made out received the punishment which was thought to be risky to inflict on the statesman. The democracy of Athens was not only fierce—it was variable in its judgments, and the innocent were too often confounded with the guilty.

It is strange that a power which was so omnipotent should have left such a slight memorial of its existence as exists in Athens. In a political sense the agora and the Pnyx are of more importance than any of the temples, and yet there is no doubt that many travellers visit Athens without paying any attention to the remains of the great political theatres. The majority of those who do visit the ruins are generally dissatisfied, because they consider the arrangements to differ too much from what is required in modern buildings where people take counsel. The fact, however, cannot be altered, that in spite of all the deficiencies of the Pnyx it is inseparable from the history of Athens.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A MEETING of the Institute was held on Monday evening last, Mr. William Emerson, president, in the chair.

The Hon. Secretary announced the decease of the two following members:—Mr. John Butler, elected Fellow in 1887, and Mr. James Buckley Wilson, of Swansea, Associate in 1872, elected Fellow in 1888.

The President, when calling on Professor Beresford Pite to read his paper, congratulated him on his appointment as professor of architecture in the Royal College of Art, under the Board of Education.

Tendencies of the Modern School of Architecture.

Professor Beresford Pite, in his opening remarks, said he proposed to divide the large and rather indefinite subject they would have to consider that evening into a series of somewhat genealogical chapters, commencing with the close of the well-known battle of the styles. They would recall the close of that campaign, then the alliance and combination of the rivals and their devotion to the doctrine that all old work is sacredly beautiful, which issued in a revolt against style in a new and unexpressed manner. They would then consider the effective results of the Gothic Revival in stimulating the subsidiary arts and crafts, especially under William Burges and E. W. Godwin, and also the influence of William Morris upon the purely decorative crafts. The ideal project of a revival of the building crafts, and J. D. Sedding's influence towards that end would follow. The present usefulness of Butterfield's work to the student would be noted. The subject of the potent influence of Mr. Philip Webb, combining with that of the school of Mr. Norman Shaw, would bring the review near to its limits.

The lecturer went on to say it should be remembered that a generation had arisen untrained in the orders and systems of proportion of the art of architecture. The published curricula of the centres of architectural education, together with the Royal Institute of British Architects' examinations syllabus, offered no evidence of a tendency to pursue the classic methods of dimension, proportion and conformity to type upon which the school of the early part of the nineteenth century based its ideals of architectural beauty. The old Classic school was dead. But it died a school, and left existing its concrete methods, its parts, proportions, principles and orders accurately systematised and available for the use of all inquirers. Its great and chief antagonist had also fallen, for but little life remained in the Gothic school that once dreamed of universal sway. But, asked the lecturer, is the Gothic Revival dying with the dignity, traditions and possibilities of renascence of the older school which it displaced? Does it leave methods, principles and styles, construction, mouldings and decorations in such order as to be practicable instruction material for future generations? Or have its motives and principles been merely the reflection of ephemeral sentiment, leaving nothing reproductive and capable of development and progressive tradition? Reviewing the tendency of the Gothic movement the lecturer glanced at the training and methods of the school, its standards of taste and criticism, its earnestness and enthusiasms, and the spirit in which its students sought to solve the architectural problems of their day. The student was instructed by constant and repeated observation and study to drink in the spirit of the old work, and to design his new buildings while under its exhilarating influence. The Mediæval spirit as it was, as it worked, as it drew, was all of system, principle or method that the modern architect could need. The Gothic revivalist was a craftsman and builder with concrete opportunities, instead of an abstract theorist, and he built upon his discoveries and enthusiasms, and therefore sketched and measured with eyes eager for piquant solutions of the daily difficulties of practice, and found nearly all he wanted. There was a wealth of material indeed, a yet unexhausted store of energy and enthusiasm in the students; but when the change came and the lamp went out there was no residuum of framework, method or principle, only the inchoate notion of the wild but real beauty of all old work, and a new delight in picturesque draughtsmanship. These were the two main resultants of the Gothic Revival at the time of its effective decease, and these effects have since formed the staple tendency of most pursuers of the art of architecture in England. The lecturer then proceeded to discuss their progress and attained results, and the future that may be expected of so narrow an equipment. Is, he asked, the love of beauty stronger than the power of truth? Or is the truth of construction that is dictated by the motto, "Build in Truth," only an exhibited hypocrisy of simplicity, and an anachronism untrue alike to the day and civilisation in which we move?

The progress of the doctrine that all old work is beautiful has been steady, and a limit has scarcely yet been formed for juvenility of the subject of beauty. Yet it must be presumed that the quaint conceits of partial ignorance, with added charms of romantic history, ruin, decay, lichen and ivy growth, have entered unconsciously into the current estimate of the beauty of old work. Apart from these accidents, there is little that can be described as good or even tolerable design in much old work that has been considered admirable because it is charming. We have lost our way amid the beauties of English antiquity. We pursue no definite ideal now, but wander aimlessly among the enchantments of quaintness, originality, and unrestrained, though demoralising, freedom of design. Breadth of view, sympathy with nature, a recovered poetry of architectural idea, and a genuine appreciation of the historic element in old buildings, have been gained in our wanderings. We are still enthusiastic and can talk with earnestness, if not intenseness, of the artistic values and importance of the most trifling elements of everyday buildings. We have around us, in nearly all the branches of architectonic and graphic art, proofs of living vigour of movement, power and genius. Painting, sculpture, the decorative arts and crafts are instinct with growth and development; and architecture, which has led the advance and quickened the allied arts into life and power, seems to have exhausted, not her forces, but the material upon which they act, and burning with suppressed poetic purpose, to have disdained and forsaken her various forms of speech, with all their necessary members of form, detail, order and group, as unworthy and incapable of sufficient expressiveness of the new light that burns within. The lecturer expressed his conviction that under the seeming voicelessness of the new sound there is present an intelligence and a purpose of expression sincere, earnest and useful. The hardly developed tongue is one of protest against thoughtless repetition and meaningless quotation in a dead language, and a resolute endeavour underlies it to speak for itself on behalf of liberty to be free from convention in its architecture, and for its attempt to oust the affectation of style by an unaffected stylelessness of difficult simplicity. Ornament in the ordinary acceptation is an abomination to it, while architectural features, methods and terms must be scorned out of their arrogance, put away and forsaken. An inquiry whether we shall in the course of elimination and abnegation attain to the simplicity of Stonehenge or of the Great Pyramid in our everyday architecture may indicate the danger, if not absurdity, of striving to make a complex civilisation, as reflected in a necessary art of civilisation, unnaturally simple.

The Professor argued that almost the same tendency had been produced by another road, viz. through the genius, the efforts and achievements of such leaders of the Gothic school as William Burges, Edward W. Godwin, William Morris and J. D. Sedding.

In the modern school we have the fruit of seed sown by the great architects of the Gothic movement, viz. the revival of the building and decorative crafts. The starting-point of the early leaders was romance, taste and association. Pugin discovered the riches of ecclesiastical decorative art, and in vestments, furniture and altar fittings opened up a new world of form springing from natural and refined craftsmanship. With the advent of William Burges a truer insight and completer grasp of the range of Mediæval art was obtained. With scholarly completeness and patience he worked away from the modern architect's standpoint down, or up, to the craftsman's level. Burges had no notion of sacrificing architecture, as the art of beautiful building, to craftsmanship of detail, but he obtained a mastery in both, a mastery founded on the pathway of enthusiastic antiquarian research. His was a living art; any example of his works, whether in building, goldsmiths' work, decoration or furniture, would be attractive and beautiful to us now. Edward W. Godwin had a very similar genius. His architectural outlook was freer, but in the faculty of insight into every craft and of discerning the essential workmanship of his detail, he was quite his equal. He had the genius of a true antiquarian, and laid hold of the life of the men who produced Mediæval art, being drawn out to them with an artist's sympathy, even to their costume. His facility and success in original Gothic design, however, did not betray him into forsaking his true grasp of the realities of architectural art. He took full advantage of the liberty the "Queen Anne" movement offered of release from the traditions of so-called style, and felt his way and worked as a building designer of simple villa houses and economical artists' studios with a rare and refined originality. Present-day æstheticism has not carried us beyond the point he attained in his houses at Turnham Green and studios in Tite Street, Chelsea, now twenty years old.

William Morris, himself a fruit of the Gothic movement, and in the sum total of his life-work Mediæval in the truest sense to the end, represents the link between the Revival in architecture and the pre-Raphaelite movement in painting. His influence and power are working at the present moment upon most, if not all, of the decorative arts. His practical alliance of artists and craftsmen, especially in early days, was an experiment which has left a permanent success as its result. We may still be in doubt as to the practicability of depending for architectural design upon the workmanlike intuition of our artisans, but we cannot avoid recognising that Morris himself was such an intuitive workman artist, and that the zeal which instructed him into that insight was kindled in the generation of Gothic revivalists, and is a veritable and beneficent influence of power in our midst to-day. Principles, however, which seemed obvious in Morris's hands when dealing with decorative art have proved difficult to carry to any extent into the practice of architectural building. Artistic enthusiasm in the craftsmen of brickwork and of masonry is, under present conditions of civil life and business, almost impossible. The attainment of a commonplace standard of honest, sound work is all the architect can hope for, and there are not as yet symptoms of any development among the craftsmen themselves of an enthusiasm for the artistic possibilities of their work which can be allied with the similar movement in the decorative arts stimulated by William Morris. Still, these difficulties have not hindered the achievement of much interesting experimental work.

Touching the late J. D. Sedding, the lecturer said that his manifold gifts peculiarly qualified him for carrying an arts and crafts crusade into the midst of the architectural world. Practical contact with the crafts closely allied to his ecclesiastical work as an architect doubtless drew him to feel the force of Morris's teaching, and he unhesitatingly bounded towards the brilliant vision that seems almost impossible of attainment to us of a living revival of the building crafts as a basis for all architectural design. He delighted in setting conventions at nought with the subtle play of an able humourist in design, the serious side of his character being bent upon the crafts with which he supplied beauty into his architectural scheme. He obtained assistance from artists and craftsmen all more or less imbued with the new teaching. Holy Trinity Church, Sloane Street, is the best illustration of his methods. The general design aims at and achieves original impressions and effects, not altogether with certain success of scale and grandeur, but with the great interest of freshness in every part. The crafts are displayed within the architectural enclosure of the building, and in the screen wall, pulpit rails, gates, table and other fittings assert their presence and indedendence vigorously.

The friends and followers of Sedding have considerably extended the tendencies of his school. They are good craftsmen in charcoal, paper and pastels; in fact, in all the resources of the architectural draughtsman's palette, and herein lies to a great extent the secret of their power. Is it irony of fate, perversity of nature, or idiosyncrasy of genius which compels so gifted draughtsmen and architects to become exponents of doctrine which disowns draughtsmanship and avoids architecture?

Of the actual effect in a monumental or public building of the new teaching we have as yet no serious examples. But in a smaller class of buildings, in some interesting domestic instances, we find the enthusiastic architect more or less successfully breasting the tide and importing by the sheer force of his own character the interest of some one or other of the building crafts into his work.

The application of the doctrine of craftsmanship is practically confined to the origination of ornament. The architect can allow the craftsman as much liberty as the employer cares to pay for, with results of really valuable work from accomplished and well-known craftsmen. But the major crafts of walling and construction are still dependent upon the master architect's training, and upon his paper and pencil, for their usefulness or their beauty. Considering, however, the progress and ultimate achievements of the Mediæval craftsman in brick and masonry, is not the movement which induced that vitality capable of repetition in a new day of light and progress?

The Professor proceeded to give his conception of the architect's relation to the building art, *i.e.* as the designer and master craftsman; the architect released from a sketchy pseudo-antiquarianism, and the master builder also, delighting in his building craft and designing with the end of expressing his delight in the wonderful resources of each and the sweet harmony of all the elements of constructive craftsmanship. He trusted this was not the empty vision of an unpractical ideal, without examples or instances of achievement. There is, for those who would seek it, abundant encouragement in unlooked-for places; efforts, sometimes crowned with conspicuous beauty, have been made by earnest men, profoundly dissatisfied with the prevailing want of true ideal, building upon the basis of building art with simple and beautiful form, devoid of the shibboleths of style, and in many cases rising with them through the level of past art to new life and true modernity of beauty. Of architects whose work may be considered to have attained this quality, the author mentioned the late Wm. Butterfield, Mr. Philip Webb, Mr. Norman Shaw and Mr. Bodley, passing their works in review, and noting the distinctive merits and tendencies of each. The genius will growingly be appreciated by which Butterfield discerned and seized the essential motive of Mediæval building art, and forthwith strove to think for himself and express his own thought in his material for its modern purpose, with absolute new art. His brickwork, stonework, ironwork, mouldings in tracery, shafts, or archivolts—in every way, all is as freshly modern as, in its day, was the work of the Mediæval masters. In the field of domestic building Mr. Philip Webb occupies a somewhat similar position; the same aloofness from the current standards of architectural "style" characterises his work as Mr. Butterfield's. His houses in Lincoln's Inn Fields and Kensington Palace Gardens are excellent examples of his art. In internal detail and decoration he has in his leading works maintained the essential quality of the building craftsmanship of the architect's art, and been foremost in the revival of the decorative crafts. His work should receive earnest attention by those who seek encouragement from current buildings of real life and progress. Mr. Norman Shaw's creations are too present to be correctly estimated. His grasp of the superficial beauty of old work has been combined with an equal internal completeness, and an amazing versatility qualifies him in later English Classic as in the earlier barbaric, crooked Gothic. He seems to know and feel for each phase alike. Why and how does this genius charm? Is it the man rather than the work? The artist-architect or the architect-builder? The building that provokes the one question is promptly answered by another of the opposite tendency, and yet all are of one spirit. Is this spirit modern or does it rise with the charms of an apparition of a departed beauty upon our dreams? or is it a living nineteenth-century actuality, typical of our attainment in life and art? Mr. Norman Shaw's school leaves us in little doubt; its members are among the most earnest and successful exponents of the craftsmanship doctrine. In ecclesiastical art of the modern school, Mr. Bodley, with his complete and perfect sympathy for the crafts of religious art, has been enabled to maintain a useful and effective guidance. In his work, and in that of his immediate followers, there is a sense of satisfaction with the restrained and refined development of later Gothic and Perpendicular for which he has such feeling. The charm is that of perfected fifteenth-century art, revived with the completeness of the original and infused with its motive and spirit.

Referring, in conclusion, to our civil architecture, Professor Pite said that the system of competitions had produced a habit of reckless originality, of tawdry picturesqueness, of ill-digested unscholarly design, which was having an alarming influence. Here the lack of tradition and of a school of settled orders and proportions has the most damaging effect. In domestic and ecclesiastical art we have survived the Gothic Revival and its repression of classicism with some success, but in civil architecture our architects are sadly and truly demonstrating their demoralisation, and sadly needed the advice and remonstrances of such a master as Sir William Chambers.

Mr. J. M. Brydon, who moved a vote of thanks for the paper, said he presumed there was a modern school of architecture which had a tendency towards some style, and the suggestion by Prof. Pite was encouraging. The paper seemed to wander a little away from the original text, and it might better have been called a criticism of the several revivals of the nineteenth century. They had heard a good deal of reference made to the craftsman and the want of style among architects, but he thought the art would not advance by throwing overboard all the styles simply for the sake of doing so; it was better to go back and study tradition. They had not heard much concerning the tendency of the modern school. What about its dwarf columns, which were sausage-like and its long columns, resembling gas-pipes? If those tendencies were in reality signs of improvement, then all was for the best. To him the tendency of the modern school was to disregard tradition, but this was not the feeling of the older school. It was appropriate that they heard a paper like Professor Pite's at the last meeting of the century; especially as everyone in the present day seemed to be groping about and trusting to the allied crafts for inspiration in their own work. He looked forward to a characteristic modern school that would pick up the broken thread of English architecture where it was dropped by the late Professor Cockerell.

The discussion was continued by Mr. H. H. Statham, who seconded the vote of thanks, Colonel Prendergast, Messrs. E. T. Hall, E. W. Hudson, G. H. Fellowes-Prynne, and the President.

WILLIAM MORRIS MEMORIAL.

On Saturday Mr. W. Holman Hunt unveiled a bust by Mr. Fehr, of the late William Morris, in the reading-room of the Walthamstow Public Library.

In his address Mr. Holman Hunt apologised for being in the position he found himself that afternoon, saying his work was of the silent kind appealing to the eye, while that of William Morris was more of the sort which addressed the ear. He remembered a very pathetic bas-relief over the entrance-gate to the Necropolis at Pompeii, which, to a certain extent, set forth the position he was in at that time. This was the representation of a ship which had made its voyage and had come back into port to anchor; the sails were being furled and the captain had arrived home. Of course the bas-relief would have represented their position more appositely if they were gathered about the resting-place of William Morris, but his bust was there looking upon them as they had seen him in life, and he would rest amongst them for the future. They could not fail to look upon his career with great interest, and the people of Walthamstow had just reason to be proud of the fact that throughout his life, wherever he wandered, he gave proof that he was fully alive to the teaching of the beautiful things which he saw around him at home. William Morris was not a man who led a selfish life in the indulgence of a particular fancy for his own gratification. He was the advocate of the application of decorative art to everything—the furniture of the house, the adornment of rooms, the clothes worn. In the days of Flaxman great attention was paid to these matters, and the houses of that period still exhibited in their mantelpieces, friezes and ceilings very much beauty; but all this disappeared in the reign of George IV. Even the silver work of the period mentioned was beautiful and much sought after now, because it bore traces of the best Greek and Roman art. Then a blight came upon the country. There appeared to be no cure for the absence of art in everything. There was one man, however, who spoke up about the matter in a very courageous and determined way, and that was Benjamin Haydon. Haydon went all over the Continent studying art. He visited Pompeii, and he came back to tell the English the result of his experience. He said if art was not revived in our manufactures England would be driven out of the markets of the world by France. Haydon lectured on this subject in London, Birmingham, Liverpool, Manchester and even in Edinburgh, and was listened to with great interest. Manufacturers were induced to put pressure upon the Government; and that gave occasion for the rise of schools of art. One was established at Somerset House, which was a great success. For some years afterwards no particular effect appeared to be produced, but then the question was taken up by Millais, by himself and by Rossetti, and they joined together in an insistence that art should be applied to all manufactures. Rossetti mentioned the matter to William Morris, and he took up the question of applied art with a will, and carried it forward in spite of every difficulty with which he was beset, so that it began to be recognised by the people. His first designs were simple and very beautiful. One of the very first, which became a great favourite, was of the simplest character—a square lattice work with flowers growing round it, and a little bird in each square. This gave a very healthy start to a popular love for decorative art. Afterwards he ventured upon much more complicated designs, in which he introduced flowers of the field he had first seen and learned to love at Walthamstow, and the blackthorn; and people learned that at the bottom of his nature there was a sweet delight in nature—which was the mother of all his productions in art. His acquaintance with William Morris began when he was thirteen or fourteen, and Morris six years of age. At that time he (Mr. Hunt) might have been found making sketches of Chingford Church; or he might have been found in 1849 far down the Lea, about Old Ford, in a punt, painting the reeds and shepherding shores of the bay. By a curious coincidence, William Morris went to Oxford, and that same picture of the Lea, which was the first of his that Morris saw, went to Oxford, and had never left the city. When Morris returned from Oxford they met again, and at that time Morris was casting about as to what branch of art to follow. He was then a simple-minded man, full of ability and zeal. He found Morris at that time a man who, when understood, was to be loved; and he loved Morris with all his heart. Then came the occasion when they were separated for years. He (Mr. Hunt) went to Palestine, which was a long way off, and Morris did not travel far. In his later days William Morris was interested in the question of Socialism. His interest in that arose, he (Mr. Hunt) believed, in consequence of his love of beauty. He saw in the world so many things which were not right; that there was greed in people who had the means to benefit their neighbours, and there was indifference; and these were not right in some way. So he made up his mind that beauty was simply justice and mercy in form, and that it was his duty to study how justice could be carried out in tangible form. He sympathised with Morris in the dream he had of a beautiful time coming, in which everyone would have just rights and be happy in his work. Morris often spoke of the shortening of hours of labour, and of making people employ their leisure in diversions and pleasure. It seemed difficult to understand that. Upon one occasion he lectured at a working men's club in Walham Green, and at the close of the lecture he was asked questions by some of the men present. In the course of his reply Morris said that in the time to which he referred human nature would be reformed; no one would be selfish, but all would work together. Towards the end of his life these views were modified, and he did not think that his dream of ameliorating society could be realised. Morris did not adopt his views upon Socialism all at once, nor did he lay down any plan for working them out, but contented himself by urging upon people to make their homes beautiful and their work happy and contented—not doing work mechanically, but adding to it forms of beauty. His Socialism was not to be judged from the crude form in which he first stated it. William Morris had greatly contributed to re-establish a love of beauty in art, which had disappeared from the face of work in England; and the lessons which he taught were not copied, they were all original. The principles of beauty were immutable and everlasting. He objected to things which were adopted simply because it was the fashion, and urged the adoption of designs that were true to art, not a fashion simply. The beautiful was beautiful to the last shred; that which was ugly was ugly from the first day to the last.

Mr. Holman Hunt then unveiled the bust, which is the gift of Mr. Passmore Edwards, and the proceedings terminated after sundry votes of thanks had been passed.

EDINBURGH ARCHITECTURAL ASSOCIATION.

A MEETING of the Edinburgh Architectural Association was held on the 12th inst. in the Royal Institution, Princes Street, Mr. Henry F. Kerr, the president, in the chair. Mr. G. S. Aitken, architect, Edinburgh, read a paper on "Bothwell Castle," which was illustrated by a series of specially prepared limelight views. Having described the situation of the castle—on the north bank of the Clyde, about 8½ miles south-east from Glasgow—Mr. Aitken went on to speak of the present ruin, which consists of the southern portion of the original building, conspicuous for its great western and south-eastern towers and their connecting walls, and occupying a space of about two-thirds of its ancient extent. The architectural features of these towers were dealt with, and the masons' marks in the great western tower were described. What object these marks served had, he said, not been determined, but the system was certainly very ancient, marks having been found on Egyptian masonry. Some experts supposed them to be symbolic, others that they were cut in the stones to show whose work they were, and how much the workmen were entitled to receive in payment. He would suggest, however, from an examination he had made of the ruins, that while the marks might be the property of particular masons, they also served the purpose of indicating the intended position of each stone in the building. The master mason, as any modern clerk of works would do, planned the various courses of masonry, marking in his drawing the symbol of each man to be engaged upon them, and allotting in that way to each hewer his work, which readily found its place in the building on reference to the master mason's original draft. The marks might also have been intended to aid in settling the amount of money that fell due to each, and at the same time assigning to the individual mason the credit due to him for workmanship. Three distinct families—the Olifards, Morays and the Douglases—have been connected with Bothwell Castle from the time of its origin till the erection of Bothwell House, situated a little to the east, the centre and north wing of which were designed by James Playfair in the eighteenth century.

If we examine the details of the various parts of the castle and determine their dates, it should not be difficult to find out what share each house had in their erection. We have good reason for stating that the western tower, with its pertinents enclosed within the inner bailey, was the work of the Olifards, because its detail is Early English, the vogue in their time.

We go further, and say there is every reason to suppose that they erected a complete castle, with the extended outline disclosed by the excavations undertaken in 1888. The period of their occupancy from the time of William Olifard II., justiciary of the Lothians, which was probably about 1180, and the date when Bothwell passed into the hands of the Morays (nearly 110 years), gave ample time to carry it out in its entirety.

It seems clear that no building of any moment could have been done during the occupancy of the Morays from the year 1292 till the date of its dismantling in 1337. The English, who often held possession during this time, were not willing to extend it, and the Scots in their turn had no chance of doing so.

We infer, therefore, that it was carried out during the time of the Olifards; the assumption is eminently reasonable when we consider that according to a contemporary record Caerlaverock Castle, which closely resembles Bothwell in idea, was by this date complete, with its circular towers and curtain walls, and we have besides further confirmation in the condition of castle building across the border, for at an earlier date than we are considering—the reign of Stephen of England—there had been erected 1,115 castles in England, many of them having the full arrangements of a fortalice, so that allowing for the later development of castle erection in Scotland, there is nothing unreasonable in assuming that Bothwell was complete prior to the invasion of Edward I. at the end of the thirteenth century.

The dismantling in 1337—intended to render the castle useless to an invader and to relieve the owner at the same time of the task of defending it—went so far we may suppose as the destruction of the western half of the great tower and the reduction in height of all the rest of the walls and towers. As the Douglases when they came into possession in 1361 had Tantallon and Douglas Castles, we may presume that, having these fortalices, they would only restore so much of Bothwell as served for occasional occupancy. If we assume that they confined their restoration to the south part, at present standing, this will solve all the difficulties of the date problem by assigning to *them* the erection of the banqueting-hall, chapel and south-east tower, which are all walls of their period. As a matter of course they would make the great western tower available for living in by building the existing cross wall, and also complete their labours by enclosing the area connected with the reinstated castle by the erection of the present north curtain wall. This theory fits all the pieces of the puzzle together.

Mr. Thomas Ross, who moved a vote of thanks, expressed the hope that the lecture would be fully illustrated when published in the Transactions. Mr. James Bruce, ex-president, in seconding, referred to the slide shown of the Douglas arms over the postern. The arms are ermine, a heart, on a chief three stars. He was followed by Mr. Rae Macdonald, Marchmont Herald, who gave some very interesting information on the heraldry of the castle.

The Monthly Meeting of the Bristol Society of Architects was held at the Fine Arts Academy, Queen's Road, Clifton, on the 10th inst., Mr. Frank W. Wills in the chair. After the routine business a paper was read by Mr. J. Atwood Slater on "Architecture considered from the higher practical and ethical standpoint." A vote of thanks was proposed by Mr. H. Dare Bryan, seconded by Mr. Joseph Wood, both gentlemen testifying to the lecturer's ability as evinced both in the drawings displayed and the paper. Mr. Mowbray Green, of Bath, supported the motion, which was put by the President and carried unanimously. A large number of architectural drawings and water-colours, the work of Mr. Slater, were exhibited and much admired.

NOTES AND COMMENTS.

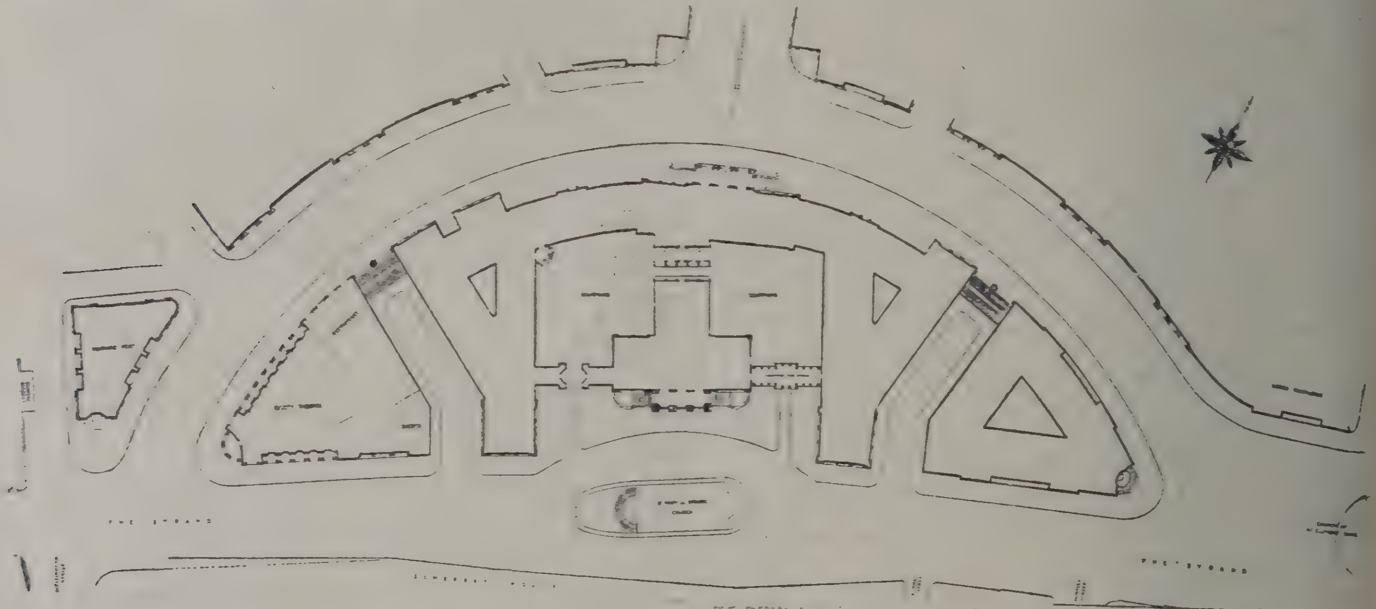
THE appropriation of the red brick house in Bushey Park as a National Physical Laboratory suggests the general interest taken in science and the economical spirit which prevails in some Government departments. It will be necessary to make many alterations in the building, and in the end it will probably be found it would have been preferable to have constructed a laboratory on modern principles. The building was erected as a dwelling-house, and since the beginning of the eighteenth century has been used for no other purpose. The peculiar necessities of a laboratory cannot be easily met by alterations in such a building. Another site could easily have been found in the neighbourhood, which would have offered equal retirement, and allowed of the erection of a more serviceable building. The associations of the lodge are not sufficient to preserve it unchanged. Lord HALIFAX obtained it from Queen ANNE, and two of his successors also occupied it. On the death of Lord HALIFAX in 1771 GEORGE III. wrote to Lord NORTH, the most somnolent of Ministers, "I shall immediately appoint you ranger of Bushey Park," an office which brought the right to reside in the house. But when the "Gazette" appeared it was found that Lady NORTH had obtained the rangership. After her death the Duke of CLARENCE accepted the appointment, and held it till his accession to the throne in 1830. Queen ADELAIDE resided there till 1849. The next tenant was the Duc DE NEMOURS, and in it many of the valuables belonging to the kings of France were stored. The necessity of a physical laboratory has been often urged by men of science, and we hope by the transformation of the new building one will be secured in which it will not be required to make allowances for errors when registering observations.

IN 1878 a Society was founded in Vienna with the object of erecting a memorial to GOETHE in that city. The work has been at last completed. That so long a period was required to obtain funds and to complete the arrangements will suggest that the fame of GOETHE is not extending. He was not, it is true, closely connected with Vienna or Austria, for he was a native of Frankfort-on-the-Maine, and for over half a century he lived in Weimar. But his works appeal to the whole German race, and it is strange that Vienna should have given the preference to SCHILLER by erecting several years ago a memorial of him. The delay, however, reveals that GOETHE was right when he said that his works never could be popular, as they were not written for the multitude, but for individuals whose minds resembled his own. When the competition took place two models gained preference. One by the late VICTOR TILGNER, which represented GOETHE as a young man, gained the first prize, but the commission for the statue was given to Professor EDWARD HELLMER. He has adopted the ZEUS type of the poet, who is shown as a man of about fifty years enthroned on a broad chair. The figure is of bronze, and is about 9 feet in height. The pedestal and steps are of granite. On the front of the pedestal is inscribed the single word "GOETHE," and on the opposite side is a relief of a man, woman and child who render homage to the poet. The memorial is in the Ring Strasse, opposite that of SCHILLER. At the unveiling, distinctions were bestowed on the sculptor and on the principal members of the committee.

THE city of Rochester possesses one ancient body which is a survival of Mediævalism, viz. the Bridge Trust. In the old days a bridge was an important institution, and the value of the property belonging to the Trust will be apparent when it is known that the money in hand amounts to 50,000*l.* But as usually happens in such cases there are applications to the Trust for much larger sums. One of the cases relates to the proposed bridge at Aylesford. The bridge is estimated to cost 50,000*l.* The Kent County Council decline to give more than 5,000*l.* towards the work. Application was made to the Rochester Bridge Wardens. They offered a generous donation of 25,000*l.* provided the cost of the bridge was 50,000*l.* But if the cost were less the Wardens should be at liberty to make a proportionate deduction in their contribution. There is in the neighbourhood of Aylesford general dissatisfaction because a much larger contribution is not offered and that there should be any stipulation about diminishing the gift if the bridge should happen to cost less. In fact, one estimate puts the cost of construction at 30,000*l.*, in which case the Bridge Trust would have supplied the largest part of the expenditure. The Wardens have many interests to consider. They are likely to be called on to contribute 15,000*l.* towards a subway at or near Snodland, and there are several other works which call for assistance.

THE restoration of Malmaison, which was undertaken at the expense of M. OSIRIS, has been completed. The château, in which NAPOLEON spent some of his happiest time, had suffered much during the fifty-five years between the fall of the Empire and the Franco-German war. Although the desire was to have only a restoration, the havoc which had been committed in the buildings has necessitated that many parts should be rebuilt. M. JAMBON, the decorator, was afraid to supersede the ceiling of the library, although the painting was in shreds, and he preferred to put the parts together and to paint in the intervals rather than to undertake a new painting. In the library PERCIER and FONTAINE intended to introduce coloured decoration, but NAPOLEON, who often used the room, would not allow his studies to be interrupted; but the original plan of the architects has been at length realised. Several of the salons have also been completed as they intended. As far as possible all the paintings and other decorations which remain have been carefully preserved.

ILLUSTRATIONS.



THE LONDON COUNTY COUNCIL HOLBORN AND STRAND IMPROVEMENT.—DESIGN NO. 23. (SEE PLAN ABOVE)

STAINED GLASS IN ENGLAND SINCE THE GOTHIC REVIVAL.

WITH SOME ACCOUNT OF THE CHURCHES REFERRED TO.

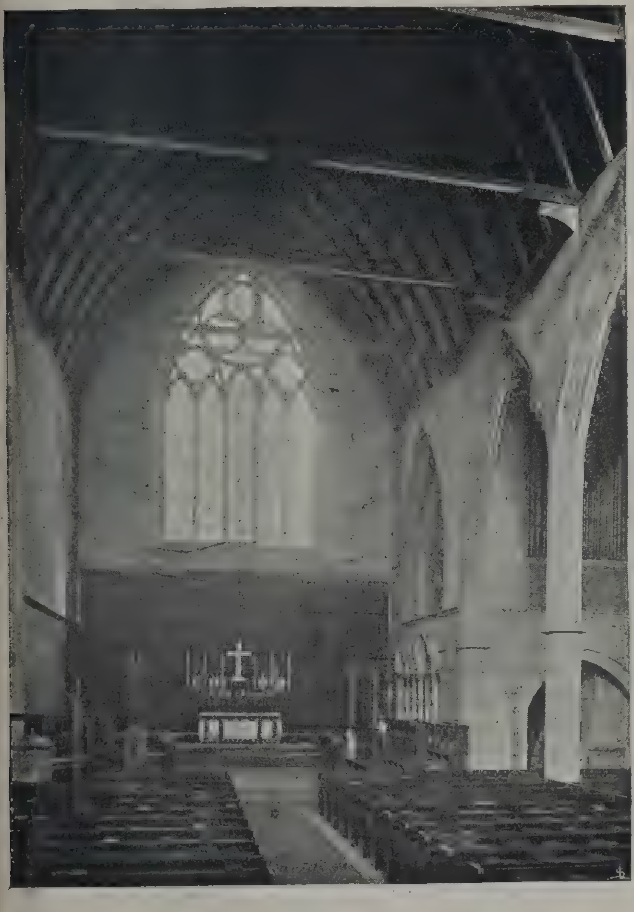
By T. Francis Bumpus,

Author of "Ecclesiologia Germanica," "Summer Holidays among French Cathedrals," &c.

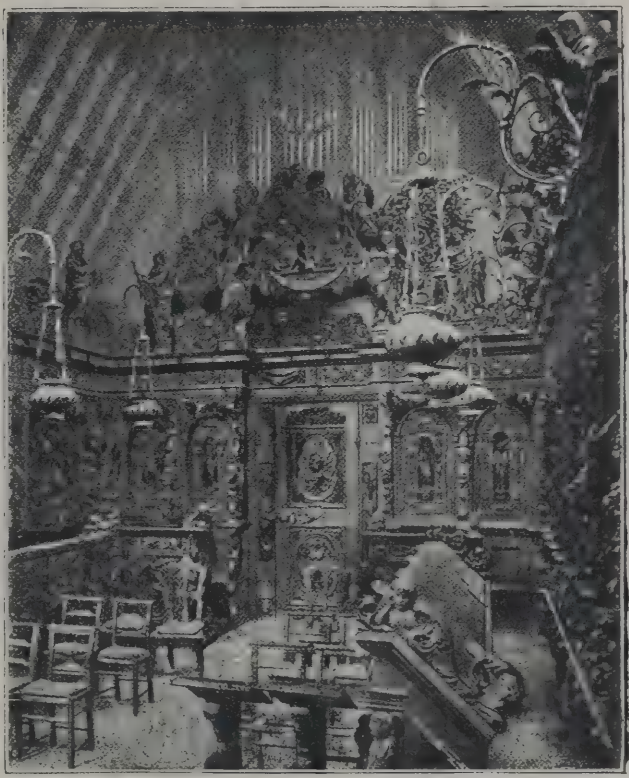
(Continued from page 364.)

The Works of Hardman (concluded).

THE student of modern ecclesiology who journeys to the eastern districts of the Metropolis to inspect St. Paul's, Bow Common—the church with whose description the last instalment of these papers closed—will do well on quitting it to bend his steps in a north-westerly direction towards a neighbouring church, equally interesting and striking, and like it the outcome of individual liberality—St. John the Evangelist, Ben Jonson Road, Limehouse, built between 1852 and 1853 mainly by the Baroness Burdett-Coutts. Deficient—painfully deficient—in stained glass is St. John's, yet it is a very impressive building, and affords a striking example of how, at a period of the Gothic Revival when the majority of our district churches were mere copies of provincial examples, and such as would be much more appropriately located in country spots, an accomplished architect—in this instance, Mr. Henry Clutton—succeeded in realising, with but slender means at his disposal, the idea of a town church in its specific characteristics, presenting certain novel and original features, and correct in its ritual arrangements.



St. John the Evangelist, Limehouse.
(*H. Clutton, Architect*, 1853.)



St. Saviour's Hospital, Osnaburgh Street.
(*Stall Work in Chapel.*)

The plan embraces a nave and chancel continuously roofed, both about 30 feet wide, and a south aisle of dimensions little inferior, separated from it by an arcade far from graceful in outline, its arches dying into the capless, circular piers, whose apparent altitude is much impaired by the introduction of a fillet at about half their height.* The great features of the church, however, are its honest brick construction, with but a little stone for the dressings; the grandeur of its fenestration, the tracery being modelled with some temperate departures from Mediæval precedent on the best early fourteenth-century examples, and affording a noble field for the display of stained-glass; the two grand parallel lengths of roof with their fine gable crosses; the manner in which, without the aid of a clerestory, the architect contrived to raise the church above the houses which hem it in on its north and east sides; and the saddle-back steeple which, situated at the extreme south-east angle, and gabling transversely to the church's axis, would—funds not being available for an additional storey—undoubtedly gain in effect by the addition of a floriated iron cross similar in motif to that which rises from the ridge of the roof of the Napoleon chapel, added by the architect of St. John's to the Roman Catholic chapel on Chislehurst Common. In its present aspect the tower has too much the appearance of a magnified transept. The entire absence of buttresses—no detriment to the general effect—is another striking feature of St. John's, Limehouse. In the first place the church forming as it does a portion of the side of two streets, there is no room for their introduction, and in the second, the nature of the roofing does not require them.

Resuming our survey of Hardman's works we find a small but good specimen in the east window of the little chapel belonging to St. Saviour's Hospital, Osnaburgh Street, upon whose Middle Pointed façade Sir John Soane's church of the Holy Trinity opposite frowns with such Classical severity.

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* In this nave arcade at St. John's, Limehouse, we perceive that desire on the part of its architect to emancipate himself from insular tradition which latterly became so marked a feature of his works. As an instance of this, the sumptuous chapel of the Sacred Heart which he added to Scoles's church of the Immaculate Conception in Farm Street between 1858 and 1859 may be taken. Conceived in that vigorous Early Northern French style studied when, in conjunction with Burges, he was preparing those designs for the church of Notre-Dame de la Treille at Lille, which gained the first prize in the competition, but which their authors were unfairly excluded from carrying out, the contrast it presents to the main fabric is very startling.

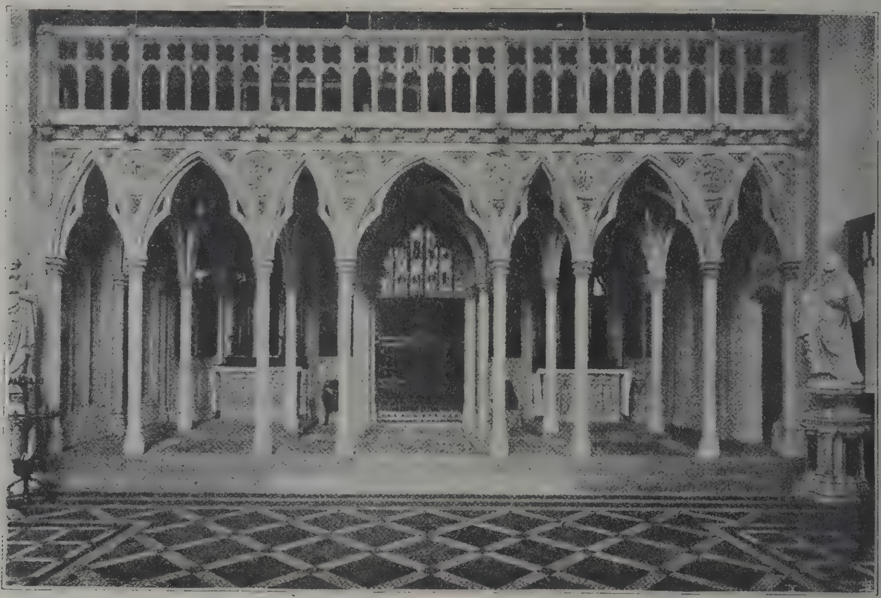
Butterfield was the architect of this pile of buildings, alluded to in *The Architect* of October 5 as being that to which the first sisterhood established in connection with the Church of England removed in 1850, after a five years' sojourn in Park village. The east window of the chapel—a parallelogram with a south-eastern transeptal projection—resembles those in the aisles of the architect's almost contemporary work, St. Matthias, Stoke Newington.

It is somewhat low, of three lights, and with a large unfoliated circle by way of tracery, containing a brilliantly tinctured figure of the Risen Lord, while the acutely pointed side-lights have each a standing effigy, with, above it, an adoring angel.

This is a much more satisfactory arrangement than at St. Matthias, where the figures occupying the side-lights are placed so high up that their heads seem wedged into the acute foliations.

Permission to view this chapel is readily accorded to those wishing to do so on presentation of their cards and inquiry for Sister Eliza, to whose courtesy the writer is indebted for the accompanying illustration of the sumptuous early seventeenth-century German stall-work with which it has been equipped by the generosity of Mr. Edward Palmer.

Passing the west front of St. Mary Magdalene Munster Square, already descanted upon in these papers, and crossing Cumberland Market, we find a much larger and more recent specimen of Hardman's work in the east window of St. Katherine's College, abutting on Albany Street, Regent's Park. Finished in 1829 from the designs of Ambrose Poynter, and conceived in the Perpendicular of that date, the present building, if we are to judge from a woodcut of the east end in the *Saturday Magazine* of April 6, 1833, from a north-west view of it published in the *Gentleman's Magazine* for February 1826, and from a plate of the interior in the Middlesex section of the "Beauties of England and Wales," has few points of resemblance to that noble but mutilated specimen of Pointed architecture removed on the formation of St. Katharine's Docks.



St. Edmund's College, Ware. The Rood-loft from the Ante-Chapel.
(*A. W. Pugin, Architect*, 1850.)

The present chapel is an aisleless parallelogram of six bays, imposing at a first glance from its height, by its equipment with some of the fittings from the old church, and by its termination in a large window of seven lights supermullioned and once transomed. The lights below the transom are entirely occupied by the Crucifixion, and those above it by the Enthronement of Christ, as described in the Epistle for All Saints' Day.

There are some remarkably fine pieces of colour in this upper subject of the east window at St. Katherine's College chapel, and some more of equal grace and refinement in the glass with which the same artists have filled the seven long two-light apse windows in Buckler's great church of the Dominicans at Haverstock Hill. In the transpontine suburbs, Pugin's cathedral of St. George, Lambeth, has received a considerable accession to its painted glass, chiefly in the northern range of windows (assuming a correct orientation), from Hardman's studios, the same artists being responsible for that in the side windows and that which partly fills the western one of St. Etheldreda's, Ely Place.

The memorial window to Dean Mansel in the north-west chapel of St. Paul's Cathedral, which, if somewhat too opaque in colouration, harmonises with the architecture, is also due to the Messrs. Hardman.

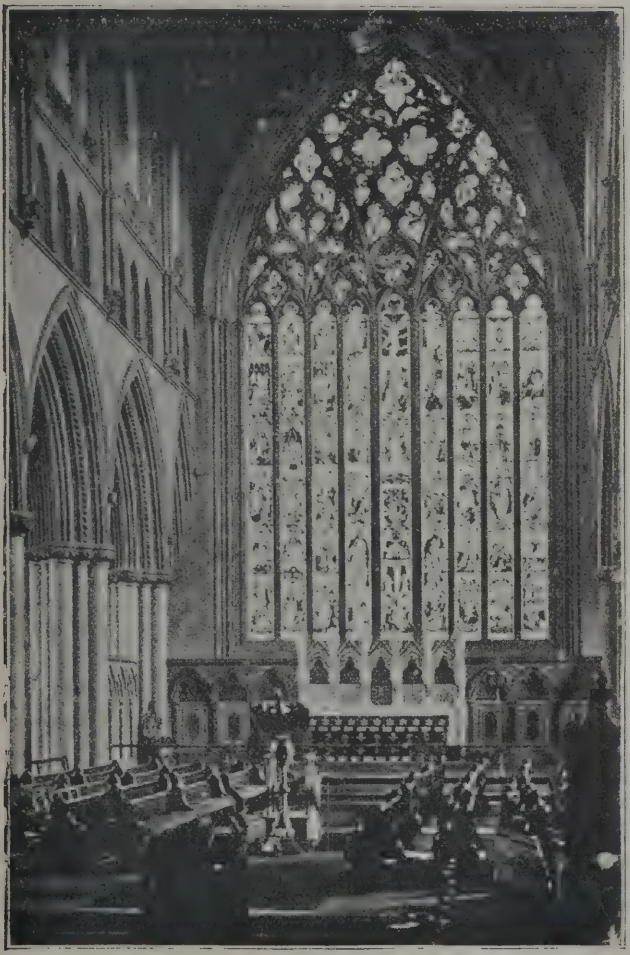
In the southern counties they have entirely filled Woodyer's graceful chapel attached to All Saints' Convalescent Home at Eastbourne with stained glass, and the effect is very good; while in the east window of old Shoreham Church, restored by Richard Carpenter in 1854, with its effigies of SS. Mary and Nicholas supported on either side by those of the two locally celebrated bishops, St. Wilfrid and St. Richard, the traditions of Pugin were adhered to.

Four subjects from the Life of St. Paul, within large medallions very archaic in treatment and filling one of the plate-traceried two-light windows in the south aisle, are Hardman's only contribution to the vitreous decoration of Chichester Cathedral. In Hansom's Roman Catholic Cathedral at Portsmouth, a large cruciform, Geometrical Decorated edifice of red brick, somewhat hard and cold, like most of the works of its architect, Hardman has some fine white groups in the apse windows illustrating the Adoration of the Trinity. The circular window in the south transept is apparently a copy of the "Bishop's Eye" at Lincoln. Buckland Church, near Reigate, presents a complete series of windows by Hardman of 1860-61, as does that of Hascombe, near Godalming, in the same county.

Proceeding northwards from London, the noble Late Decorated east window of seven lights and the three-light side ones in the chapel of St. Edmund's College, Ware, once more bring under our notice some works of the single-figure and canopy kind actually superintended by Pugin.

It was not possible to secure a view of this interesting specimen of Pugin's work conveying an adequate idea of the stained glass with which, in the single-canopied figure style, its windows are filled. The accompanying illustration therefore has been chosen as presenting a feature upon which that architect frequently lavished much thought and skill—the rood-loft. Like the one so regrettably removed from its proper place in St. George's, Lambeth, and which recalls as its prototype that graceful screen facing the east window in the retro-choir of Beverley Minster, this one at Ware seems to have been based (in detail) by Pugin upon a specimen of Pointed which doubtless many readers will recognise. Pugin had a great fondness for Beverley. Here it was that he first met Myers, to whom, with but few exceptions, he entrusted the erection of his buildings, and it was the south-west pinnacle of St. Mary's Church in the same town that received the graceful vane which, produced during a lucid interval of the terrible malady under which he finally sank, is invested with a melancholy interest as being the last work of its gifted author.

For Butterfield, by whom it was restored in 1857, Hardman executed the east window of that charming specimen of Suffolk Early Perpendicular, St. Peter's, Sudbury. Hardman's work at Norwich Cathedral is comprised in the Bignold memorial window, one of two lighting the seventh and eighth bays of the south aisle, which as well as the corresponding Norman arcades were veiled in Late Perpendicular work by Bishop Nix; in the windows of the Jesus Chapel; and in the east and south windows of that dedicated to St Luke, both of which chapels, it will be remembered, open out of the procession path of a cathedral so remarkable as having preserved its Norman ground plan more perfectly than any other. In certain respects this glass of Hardman's at Norwich is superior to that with which he has recently filled the large Roman Catholic church completed a few years ago at Cambridge, and which somewhat unpleasantly bears upon it the impress of "wholesale manufacture."



Carlisle Cathedral. The Choir and Great East Window.

Further north we have the great east window of St. Mary Magdalene, Newark, several in the aisles of Boston Church, the great western and transeptal ones at Beverley, the west window of Holy Trinity Church, Hull, and the east windows o Manchester and Carlisle Cathedrals.* Each is an extensive but not particularly remarkable example of Hardman's style.

The Roman Catholic Cathedral of St. Anne at Leeds begun by Augustus Welby, completed by Edward Pugin, and regrettably (from its association with those two names) about to be removed in favour of a new building, shows in the windows of its polygonal apse the Radix Jesse in firm and brilliant colours. For the display of such a subject as this the discontinuous windows of an apse are scarcely adapted, the safest iconographical scheme to be pursued in such a case being that system of parallelised scenes from the Old and New Testament which Hardman executed in 1855 for the vaulted apse of Sir Gilbert Scott's commandingly-situated church of St. Paul, Dundee.† Clayton & Bell's work in the apse of a contemporary, and in some respects analogous, church by the same architect, St. Mary's, Stoke Newington, as well as their glass in the graceful and more perfect, because vaulted one, of Exeter College Chapel at Oxford, exhibits the same intelligible and appropriate system of iconography.

RUSKIN MONUMENT.

THE monument which is now in course of preparation for the burial-place of John Ruskin in Coniston churchyard is from a design by Mr. W. G. Collingwood, of Coniston. The monument is a tall cross of the type lately revived from ancient models of the age before the Norman Conquest. This early English model has been freely adopted, in the belief that Mr. Ruskin himself, if it was a question of one form of headstone rather than another, would have chosen something of the kind. The cross is of the hard green stone of the neighbourhood, supplied from the quarries of Tilberthwaite, not easy to carve, but likely to last practically for ever, and not liable to chip or lose its pleasant grey-green colour. It is slender and tall, but standing not more than 9 feet from the ground. The base is cut into the three Calvary steps, as they are called, usual in such monuments. On the side facing the grave and looking east at the bottom is a figure with a lyre, representing Mr. Ruskin's earliest works, poems and the poetry of architecture. Above this in a panel of the interlaced work so often seen in such crosses is his name and the dates 1819-1900, the only lettering thought necessary, for all the rest of the story is told in pictures. Over the name is the figure of an artist sketching, and the pines, about which

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* The glass in this grand nine-light window at Carlisle was inserted early in the sixties as a memorial to Bishop Percy (d. 1856). Prior to the Reformation this window exhibited, as does that of Selby now, one of the most splendid instances of the employment of the Doom in conjunction with the Radix Jesse. The latter had entirely disappeared from the lights, but the former, which occupies the tracery, is in a fine state of preservation. "We have Our Lord sitting in judgment, the Procession of the Blessed to the Palace of Heaven, the Place of Punishment for the Wicked, and the General Resurrection. The figure of Our Saviour is in the uppermost quatrefoil of the central compartment. His countenance will bear the closest inspection; it exhibits evident traces of suffering, but is calm, severe and dignified. His head is surrounded by a cruciform nimbus. Below this are two quatrefoils, easily distinguished by their silvery appearance. These represent the Procession of the Redeemed to the heavenly Jerusalem, whose towers and pavilions are shown in the quatrefoil to the right. St. Peter stands in the gateway in an attitude of welcome; at his feet flows the River of Life, which some of the Redeemed have reached. The red glare of the Place of Punishment makes it easy to be distinguished; the tortures represented are of the most realistic character, and the devils are very material beings, with tails, hoofs, and horns. The rest of the picture is occupied with the representation of the General Resurrection—the dead rising from their graves. Ecclesiastics are vested, but laity rise naked, though kings wear their crowns. Several bishops are among the crowd, and a pope wearing the triple tiara. Some of the ecclesiastics are bearded, and probably are intended for canons of the cathedral, who, being Austin or Black Canons, would wear their beards. In one of the quatrefoils, just above the mullions, is a figure surrounded by a heraldic border; this represents John of Gaunt, who was Governor of Carlisle from 1380 to 1384. It is said that he supported the prior, William de Dalston, who refused obedience to the bishop, and had been excommunicated, and that out of gratitude he was thus represented in the east window." (From "A Guide to the Cathedral of Carlisle," by R. H. and K. H.)

† Thus the first window on the left-hand side of the apse has the Expulsion from Paradise, paralleled by the Annunciation; the second, Isaac carrying Wood to Mount Moriah and Our Lord bearing His Cross; the Lifting-up of the Brazen Serpent typifies the Crucifixion in the central window; the fourth has Jonah Cast from the Whale and the Resurrection; while in the extreme right-hand window the Ascension is balanced by the Translation of Elijah. At Exeter College the Annunciation is typified by the Appearance of the Angels to Abraham, and the Resurrection by the Extraction of Joseph from the Pit.

Mr. Ruskin wrote with such enthusiasm, with the range of Mont Blanc slightly indicated, and the rising sun, which was his device on the cover of the first great work, "Modern Painters." Above is the Lion of St. Mark, for his "Stones of Venice," and the Candlestick of the Tabernacle for "Seven Lamps." The south side is filled with a scroll of his favourite wild rose in bud, blossom and fruit, and on the boughs three of the creatures he wrote about with affection in "Love's Meinie" and elsewhere, the squirrel and the robin and the kingfisher. This is meant to symbolise his interest in natural history. The west side, looking towards the mountains, represents his ethical and social teaching. At the bottom is the parable of the workmen in the vineyard, receiving each his penny from the master, "Unto this last." Then a design of "Sesame and Lilies," and in the middle "Fors Clavigera," the Angel of Fate holding the club, key and nail, which every reader of his work will easily recognise. Over that is the "Crown of Wild Olive," and at the top "St. George and the Dragon." The north side is a simple interlaced pattern. The crosshead on one side bears the globe, symbolising in those old sculptures the Sun of Righteousness, and the other side has a disc with the Fylfot, or revolving cross, accepted all the world over as the emblem of eternal life. The carving is purposely kept low and flat, bringing out the subjects by touches of shadow rather than in high surface relief. The work of cutting the monument is now in the hands of Mr. Miles, sculptor, Ulverston, who was employed on many occasions by Mr. Ruskin at Brantwood.

LICHFIELD CATHEDRAL: ARCHED RECESSES.*

THE following explanation of the small chapels outside the lady chapel of Lichfield has been given by the Rev. J. C. Cox:—

These structures, whatever be their right designation, are three in number, and consist of small vaulted chambers built between the buttresses on the south side of the chapel of Our Lady. The chamber nearest to the east has an area of 8 feet 8 inches by 5 feet 9 inches, and has a doorway communicating with the interior of the cathedral. The central one is the largest, being 13 feet by 5 feet 9 inches, and can only be gained by a square-headed doorway from the east chamber, which passes through the intervening buttress, having a thickness of 3 feet 3 inches. The chamber to the west is gained by another small doorway out of the lady chapel, and has an area which almost exactly corresponds with that of the east chamber. From this room a low doorway in the west wall gives access to a flight of stone steps that leads down to three crypts, or vaults, below the three chambers. The floor of these crypts is on solid rock, and level with the foundations of the fabric itself. A narrow gangway round the intervening buttresses gives access to the central and east crypts. That these crypts and the superincumbent chambers formed part of the original design of the lady chapel cannot be for a moment doubted, as the stones from which the vaulting of the crypts spring are a component part of the masonry of the main wall. The roofs of the three chambers are nicely pinned with stone ribs and bosses, and the floor of the central one is still partly covered with encaustic tiles of a simple yellow-and-black glaze, arranged alternately in a lozenge pattern. In proceeding to the exterior of the lady chapel it will be found that these chambers are surmounted by sharply-pitched gables, which have originally covered richly ornamented sepulchral recesses. Their cuspings must have been something after the fashion of the canopied external tomb to the east of the south transept entrance of this cathedral. The front stones of these recesses have been all removed, probably in the course of last century, owing to their being much decayed. At the same time, or at all events not earlier than the seventeenth century, the windows of the two side-chambers were cut down, so as to form doorways communicating with the exterior of the building. It seems likely that the doorway nearest the east was the first thus treated.

I have carefully looked over all the known engravings of Lichfield Cathedral, beginning with the illustrations to Fuller's "Church History" and Dugdale's "Monasticon," as well as several private drawings and views of an early date, but of those which give a south view none are executed with sufficient minuteness or accuracy to determine the condition of these recesses. It was not until I came to an engraving of Snape's, of the year 1781, that any view giving details of this part of the fabric was found, and there the doorway of the eastern chamber is shown in its present condition, and also the two windows over the central recess. After that date there are several views, including the accurate plate in Britton's "History" (1836), that give all the recesses as they now are. Fortunately, the cinquefoil head of the two-light window of the west chamber still remains, so that this and its fellow can be restored precisely as it was originally constructed. The two plainer two-light windows of the central chamber are yet *in situ*, though the mullions have been renewed at a later date. Below these two windows is a stone-coffined recess, measuring internally 6 feet 3 inches long by 2 feet broad and 18 inches deep, and I am told that undoubted traces have been found of its having once been occupied by a lead coffin. This receptacle forms a component part of the design; the front of it is panelled after the same pattern that prevails on the walls of the lady chapel just below the battlements. It is also evident, from a careful inspection of the recesses that flank the central one, that these also have each had their coffined receptacles, ornamented in the same way as that which now remains. These would be removed when the outer doorways were constructed.

Sepulchral recesses in the outer walls are not of nearly so frequent occurrence as those in inner walls, but several instances may be noticed in Derbyshire churches, *e.g.* North Wingfield, South Normanton, Church Broughton and Sawley, where there are sepulchral recesses in the south chancel walls, all of the fourteenth century. In the case at Sawley, the effigy (which has been recently most wrongfully displaced) is probably that of a prebend and treasurer of this cathedral, who seems to have rebuilt the chancel. At Crich the first chaplain of the chantry of SS. Nicholas and Katherine, founded in 1350, was buried in an outer recess in the north wall, that aisle having been rebuilt by the founder, who himself occupies a niche on the inner side of the same wall. Whenever evidence can be obtained about such recesses it is almost invariably found that they were intended for founder or co-founders of the structure. If the date of the lady chapel can be determined with precision, we also obtain the date of these three chambers, with their outer tombs, for, as has been already remarked, they are a component part of the fabric itself.

It has hitherto been stated in all the numerous works treating on our English cathedrals, as well as in the histories, guides and more critical surveys of Lichfield in particular, that the lady chapel was begun by that fearless and munificent prelate, Walter de Langton, who ruled over this see from 1296 to 1321, but that his death occurring before its completion, it was finished by funds left by him for that purpose. But, on looking for the original authority on which these statements are based, the "Chronison Lichfeldence" (Cott. MSS. Vesp. E. 16), compiled in the days of Langton's successor, we do not find that this statement is precisely substantiated. It records that Langton surrounded the close with a stone wall; that he prepared a most costly shrine for St. Chad; that he rebuilt the castle of Eccleshall and the manor-house of Heywood; that he presented to the high altar a chalice and two cruets of purest gold, a gold cross set with precious stones, and worth 200*l*, and many vestments of inestimable value; that he constructed a great bridge over the Minster Pool; that he gave the vicars a residence in the close, presented them with a large silver cup, and endowed them with a pension of 20*s*. out of the rectory of the church of Tibshelf, in Derbyshire; and that he founded (*fundavit*) the lady chapel, and left by his will sufficient money for its complete construction. The expression "founded," when compared with numerous instances of the foundations of chantries, does not necessarily imply more than that the royal license was obtained for the alienation of certain properties and pledges given for the finding of certain sums of money; so that a chantry, for instance, has often been said to have been founded several years before the building was commenced. The style of architecture of the beautiful lady chapel, which has been justly described by Britton as "one of the finest and most elegant examples of ecclesiastical architecture in England," and which a later historian, Rev. Mackenzie Walcott, speaks of "as the gem of the cathedral," certainly approximates much more to 1350 than to 1300 (the date assigned to it in Parker's Glossary, &c.), and the notion that even the material foundations had scarcely been laid in Langton's time is remarkably corroborated by the register of the Chapter. The registers now in the possession of the Chapter do not begin till 1380, but there is an earlier volume of Chapter records in the Bodleian Library (Ashm. MSS. 794) that covers the period of which we are treating. This volume was probably removed from the muniment-room by that not too scrupulous antiquary, Elias Ashmole. It is there recorded that Bishop Langton, who held the office of Lord Treasurer, died in London on November 9, 1321 (not November 16, as stated in the "Anglia Sacra"). Certain obsequies are recorded as observed at Lichfield by the capitular body, reinforced by twenty monks from Coventry (the other capitular body of the see), who made a procession from the cathedral to St. Chad's Church and back again. In September 1323 there is an entry of agreement between the Chapter and Bishop Langton's executors, by which it was arranged that the Chapter and the executors were to halve the costs concerning the finding of a quarry (*circa lapidicinam inveniendam*) and of the raising of stone *pro fabrica capellæ*. Also that when it should become necessary to dig out a new quarry it should be quarried and dug out in the name of Master Gilbert and his executors, to whom restitution should be afterwards made by the custodians of the cathedral fabric. From this it appears that the very selection of a quarry for the lady chapel was not determined on until two years after the bishop's decease. The same source tells us that in September 1334 Edward II. gave a bond to the Chapter for payment of 257 marks 9 shillings, held by him on loan from the late bishop for the purpose of the Scotch wars, being in conjunction with 94 (? 904 "Anglia Sacra") marks, the amount bequeathed by the bishop to the Chapter for the lady chapel. The king assigns for payment the feefarms of Oxford, Shrewsbury, Nottingham and Bridgeworth. Another entry in September 1335 shows that the works were still in progress. Canon Blount states in Chapter his readiness to restore to Gilbert le Bruere, as Langton's executor, a cup which had been left in his possession and the land of the quarry of Godputte, but asks that something should be assigned to him for the diligent care he has given to the (building of the) chapel. The Chapter orders 40*s.* to be paid him by Gilbert le Bruere on the arrival of John de Langton (brother of the Bishop), his co-executor. It is interesting to note that Gilbert le Bruere, the acting executor, was a canon of Wells, and at the same time concerned in forwarding the works connected with the lady chapel of that cathedral, which has many points in common with that of Lichfield. Canon Bruere, if I am rightly informed—and I have not had time to collate this information—afterwards became Dean of St. Paul's, and was buried in that cathedral.

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* For illustration, see page 120.

I take it, then, that these chambers we are now considering could not have been begun until after the decision of the Chapter in 1323. The three outer tombs were very probably intended as the resting-places of the executors of the munificent Bishop (though not eventually, at all events, in the case of Bruere, thus used), and none of them could have been designed, as sometimes conjectured, for the Bishop himself. When the corpse of Langton was brought from London it was in the first instance deposited beneath the high altar of the lady chapel. This must not be understood as meaning the present lady chapel, but the previous one of Early English workmanship, whose eastern wall would about correspond with the seventh or last piers of the present presbytery, and whose outer wall would probably not be taken down until the newly-extended lady chapel had been nearly or quite completed. Bishop Roger de Norbury removed the bones of his predecessors to a magnificent tomb on the south side of the high altar, between the fifth and sixth piers of the presbytery. Dugdale, in his Visitation of 1662, took a careful drawing of this monument, which is now at the College of Arms, and it has been reproduced in Shaw's "Staffordshire" The canopy of the tomb was subsequently destroyed, and only the effigy in Purbeck marble now remains, resting on the pavement of the south choir aisle.

These three chambers, to which I am trying to confine my attention, have been generally spoken of as chantry or mortuary chapels, but there is no necessity whatever to connect them with the panelled coffins below their windows, and they certainly seem to me to be considerably too small for the necessary altar ritual. They do not show any trace whatever of any altar or piscina drain, though surely the latter would certainly have been constructed had this been the intention of their builders, seeing that they are so close to the outer wall. I have heard the recess in the west wall of the central chamber spoken of as if it was part of the original work, but it has a very recent origin, having been cut out in connection with the placing of a warming apparatus in the vaults below, an operation which in several ways disfigured the roof and other parts of these chambers. It may also be mentioned that these vaults are said to have been used as dungeons in Harwood's "Lichfield," but he does not give his authority. A legend that once reached my ears spoke of some Parliamentary spies, who had been detected within the close, being kept in durance in these diminutive vaults whilst the cathedral was besieged during the Commonwealth. But such use, if it ever occurred, would be only provisional, and was not originally intended. Another argument against the use of the chambers themselves, or any one of them, as chantry chapels is that the sites can all be assigned elsewhere in the fabric for all the known chantries. Bishop Langton himself endowed two chantries in this cathedral, which continued here down to the days of the Reformation, one in honour of the Blessed Virgin and one for the soul of King Edward, but the masses of both these chantries were celebrated at the chief altar of the lady chapel.

Although neither of these chantries had any connection, so far as the actual celebrations were concerned, with these chambers, I am inclined to think that they afford the clue for explaining their use. Special chantries often had their special vestries or sacristies assigned to them, or built for that special object. Numerous instances in proof of this might be given, but as I am addressing a Derbyshire Society, I will content myself with saying that the founders of the Kniveton chantry in Ashborne parish church (where masses were said at the high altar), built a vestry, the doorway to which seems to have been recently discovered in the north chancel wall, to contain the coffer in which the endowment deeds were deposited and the vestments of the chaplain; and I may also add that when Dean Heywood was building a new chapel in connection with this cathedral in 1474, he added a strong room for evidences and valuables ("Cantaria S. Blasii," vol. ii. f. 27, Chapter MSS.). The general sacristy of the cathedral, built in the thirteenth century, was probably not one whit too large for the wealth of vestments and ornaments, &c., pertaining to the high and other subsidiary altars; and what is more likely than that the executors of Bishop Langton, when so materially increasing the size of the fabric, should provide small rooms for such purposes? I therefore think that I have given some good reasons for supposing that the east and central chambers may have been for the reception of the endowment charters of the priest of Our Lady, and the vestments and other valuables pertaining to the Mary altar, whilst the western one, with its separate door, may have served in a similar way for the chantry of less importance connected with the memory of King Edward. It should also be noted, as a minute confirmation of my view, that the free admission of air was considered advisable for the contents of these chambers, as the windows or shutters were fixed on hinges. It seems probable that a closer examination of the Chapter registers and other muniments might afford conclusive evidence of the use of these chambers; and before this paper is published, if it should be thought worth including in our Transactions, I hope to be able to make several additions and possibly some corrections.

A TOUR ABROAD WITH RUSKIN.

A LECTURE was delivered before the Leeds Literary and Philosophical Society on Tuesday, descriptive of "A Tour Abroad with Ruskin," by Mr. W. G. Collingwood. The lecturer at the commencement gave a brief summary of Ruskin's early training, remarking, says the *Leeds Mercury*, that though never a great artist, he was certainly a powerful draughtsman Some people assumed that he criticised art without knowing anything about it. But no one could criticise an art efficiently who was unable to do anything in it himself. Mr. Collingwood said he did not propose to speak on Ruskin's views on various subjects; everybody could do that nowadays. He rather proposed to give some account of the interesting tour which he made along with him after his first serious illness, and to show some idea of Ruskin's skill as an artist in copies of the drawings made on that tour. Opening with a lovely sketch of the church at Abbeville, he noted how much more than mere architectural detail there was in the picture; how the artist had infused into it something that made the scene of the drawing a lasting memory. Then some beautiful bits of French Gothic were thrown on the screen, including a view of Amiens Cathedral and the choir of Rheims, and, in passing, it was noted that Ruskin's strong dislike of "restoration" was overcome at Vézelay, where he passionately admired the work of Viollet-le-Duc. From France they passed to Switzerland, though not before a vignette of a turret was shown, giving Mr. Collingwood occasion to observe that the vignette allowed of idealisation, as the photographer knew when taking a lady's portrait. From Switzerland the scene changed to Italy, of whose churches, particularly at Turin, Pisa and Venice, some excellent drawings were thrown on the screen. People, said Mr. Collingwood, used to be ashamed to admire St. Mark's; it was thought barbaric. Now everybody admired it because Ruskin did. Ruskin, however, did not expect everybody to accept all he said; what he intended was to shake people out of themselves and make them feel a hankering after beauty. A curious thing about this tour was the deep interest which Ruskin took in the monks. Ruskin, he need hardly tell them, was not a Roman Catholic, but he had a great liking for Mediæval religion, for religion, that was to say, before there were "Roman" Catholics or English Protestants. And so in Switzerland he cared more for the monks than the mountains. That was but natural. A young man thought the mountains important; an old man the monks, because he was himself so much like one. He visited Citeaux, where no trace of the monastery remained, and at La Fontaine, where St. Bernard was born, he knelt so long in prayer that a Frenchman asked the lecturer if his friend was a poet. That was it—Ruskin was so many things in one. He admired the monks while admiring also the simplest forms of Protestant Dissent. His drawing of the aspen revealed his wondrous patience; other drawings showed his power, his love of truth and beauty, and no doubt to his influence was due the rise of that wave of altruism which was perhaps now at its height. Mr. Whymper said of Ruskin's drawing of the Matterhorn that anyone could see his way up by it, and the lecturer, though he had seen many pictures of the Matterhorn, had never seen one so faithful in its line. Then the beautiful Dryad's Crown, as it was called, was an illustration of Ruskin's marvellous sense of gradation in curvature. They could imagine how one with such a sense of the beautiful must feel when used to the contemplation of such things one came to look upon inferior work in art. We all had the desire to be pretty, but we must remember the saying, "Il faut souffrir pour être belle." The British people, however, wanted to be "belle" and to make money at the same time. Ruskin believed that it was right that one should put aside something, and give oneself to beauty—to sacrifice something for what was an end in itself. Dr. Wicksteed presided, and at the close a hearty vote of thanks was given to Mr. Collingwood for his admirable lecture.

GIFT OF TURNER DRAWINGS.

It was intimated some time ago, says the *Scotsman*, that an important bequest of Turner drawings had been left to the Scottish nation by the late Mr. Henry Vaughan, of 28 Cumberland Terrace, Regent's Park, London. Mr. Vaughan, who died last November, was the possessor of one of the finest collections of drawings by J. M. W. Turner, R.A., which was known to exist. He was desirous to share these among the galleries of the three countries, England, Scotland and Ireland, and in his will he left the portion destined for Scotland to the Royal Institution for the Encouragement of the Fine Arts, Edinburgh—a body which ceased to exist when the National Gallery came into being in 1858. The members of the Board of Manufactures, who took over for the nation all the pictures that that old body possessed, have been engaged for some time past in convincing the trustees of Mr. Vaughan that they are the legitimate heirs of the Royal Institution. Fortunately all legal difficulties have now been smoothed away, and the National Gallery and the nation are to be congratulated that in the course of a few days they will have in their possession some thirty-eight Turner drawings in water-colour, which have been valued at 10,000*l.* Mr. Vaughan was apparently a believer in the theory that Ruskin propounded regarding water-colour drawings, and especially of Turner drawings, that if continuously exposed to light they were apt to fade. He has accordingly ordained in his will, as a condition of the acceptance ol the drawings, that they shall only be exhibited for one month in the year, and for the rest of the time be locked up in a dark cabinet. The month specified is January; and though the drawings are all in portfolio, the Board of Manufactures are hopeful that between now and the beginning of January they will all be framed, and that the public will have an opportunity of seeing this splendid bequest exhibited on screens at the National Gallery next month. Another stipulation is that they are to be shown all together, six days in the week, and that no charge for admission is to be made. The drawings are of various sizes, not a few of them being of considerable dimensions and of much importance. Some half a dozen of them belong to what is known as the English and Scottish series. In addition to the Turner pictures there is also a bequest of drawings by the late T. Stothard, R.A., about twenty in all, some of them the originals for the illustrations to Burns's poems and songs, and others illustrations of Rokeby. The official list of the Turner drawings which has been supplied by Mr. Vaughan's trustees to the Board of Manufactures is as follows:—1, Man of War (pencil); 2, Rye; 3, Dover, Medway; 4, Beachy Head, looking towards Newhaven; 5, Dover (old harbour); 6, Nieuwied; 7, Rymers Glen; 8, Chiefswood Cottage; 9, Melrose; 10, Lake Coriskin; 11, Himalaya; 12, Schwytz; 13, Sion; 14, Verrex; 15, Thun; 16, Schaffhausen; 17, Schaffhausen (side view); 18, Schaffhausen (moonlight); 19, Alpine View, Italian side, landscape, Switzerland; 20, Piazette, Venice, Storm, Lightning; 21, Grand Canal, Venice; 22, Palazzo Balbi, Venice; 23, Rialto; 24, Sun of Venice; 25, Splugen Pass; 26, St. Gothard; 27, Lake Como, looking towards Lecco; 28, Ehrenbreitstein; 29, Harbour View; 30, Sea View; 31, Lake Albano; 32, Durham; 33, Llanberris; 34, Heidelberg; 35, Falls of Clyde.

NORTHAMPTONSHIRE ARCHITECTURAL SOCIETY.

The annual meeting of the Architectural Society for the Archdeaconries of Northampton and Oakham was held on the 10th inst. at the Society's Rooms, Sheep Street, Northampton. The Rev. A. W. Pulteney occupied the chair, and there were also present the Rev. E. L. Tuson, Mr. R. P. Brereton, the Rev. A. K. Pavey, Rev. A. St. G. B. Cummins, Rev. R. M. Serjeantson, Rev. T. R. Macnally, Mr. Matthew Holding, Mr. R. Birdsall, Mr. R. G. Scriven, Mr. H. M. Scrivener and Mr. C. A. Markham (hon. secretary).

The Rev. A. K. Pavey and Mr. C. A. Markham were elected hon. secretaries.

The Rev. E. L. Tuson was appointed treasurer, and Mr. E. M. Brown auditor.

Certain alterations to the rules of the Society were approved of.

The Chairman, in reply to a question, said it had been thought undesirable to amalgamate with the Northamptonshire Natural History Society.

It was decided that the title of the Society should be in the future the Architectural and Archæological Society, &c.

Mr. C. A. Markham presented the fifty-fifth annual report, which stated that four members of the Society had died during the year, and one had resigned. Nine new members had been elected during the year.

The Rev. E. L. Tuson submitted the treasurer's report. The receipts showed a total, including a balance in hand of 18*l.* 11*s.* 2*d.*, of 64*l.* 13*s.* 2*d.* The expenditure amounted to 48*l.* 13*s.* 6*d.*, leaving a balance in hand of 15*l.* 19*s.* 8*d.* Both reports were adopted.

An interesting paper on "Some Remarks on the Characteristics of North Northamptonshire Churches" was then read by Mr. R. P. Brereton. The chief pride of North Northamptonshire was, he said, unquestionably the church at Warmington, confessedly pre-eminent, if not unrivalled, among Early English churches not only in their district but all over England. Mr. Brereton said they might regard their churches in many aspects, historical, ecclesiastical, or antiquarian, or æsthetic, but if those remarkable relics of Gothic architecture, which were the legacy of the Middle Ages, were to be all they hoped some day they would be, and enjoyed by the many as they were now by the few, they must probably agree that it must be on artistic lines.

A vote of thanks was accorded Mr. Brereton for his excellent paper, on the proposition of Mr. Holding, seconded by by Mr. C. A. Markham.

TESSERÆ.

Pareja and Velasquez.

Juan de Pareja, one of the ablest of Spanish painters, and better known to fame as the slave of Velasquez, was born at Seville in 1606. His parents belonged to the class of slaves then numerous in Andalusia, the descendants of negroes imported in large numbers into Spain by the Moriscos in the sixteenth century, and in the African hue and features of their son there is evidence that they were mulattoes, or that one or other of them was a black. It is not known whether he came into the possession of Velasquez by purchase or by inheritance, but he was in his service as early as 1623, when he accompanied him to Madrid. Being employed to clean the brushes, grind the colours, prepare the palettes and do the other menial work of the studio, and living amongst pictures and painters, he early acquired an acquaintance with the implements of art and an ambition to use them. He therefore watched the proceedings of his master, and privately copied his works with the eagerness of a lover and the secrecy of a conspirator. In the Italian journeys in which he accompanied Velasquez he seized every opportunity of improvement, and in the end he became an artist of no mean skill. But his nature was so reserved and his candle so jealously concealed under its bushel, that he had returned from his second visit to Rome and had reached the mature age of forty-five before his master became aware that he could use the brushes which he washed. When at last he determined on laying aside the mask he contrived that it should be removed by the hand of the king. Finishing a small picture with peculiar care, he deposited it in his master's studio with its face turned to the wall. A picture so placed arouses curiosity, and is perhaps more certain to attract the eye of the loitering visitor than if it were hung up for the purpose of being seen. When Philip IV. visited Velasquez he never failed to cause the dual or the masterpiece that happened to occupy such a position to be paraded for his inspection. He therefore fell at once into the trap, and being pleased with the work, asked for the author. Pareja, who took care to be at the royal elbow, immediately fell on his knees, owning his guilt and praying for His Majesty's protection. The good-natured king, turning to Velasquez, said, "You see that a painter like this ought not to remain a slave." Pareja, kissing the royal hand, rose from the ground a free man. His master gave him a formal deed of manumission, and received the colour-grinder as a scholar. The attached follower, however, remained with him till he died, and continued in the service of his daughter, the wife of Mazo Martinez, until his own death in 1670.

Mediæval Plans.

Any thing resembling the working drawing of modern times is not to be discovered. The archives of Durham Cathedral have been carefully searched for architectural plans, but without success. A manuscript commentary upon the Prophet Ezekiel, belonging to the Dean and Chapter of Durham, written apparently in the eleventh century, contains some curious pen-and-ink delineations in the Norman style of

Ezekiel's temple, such as ground plans, elevations, &c., which prove the architectural skill of the commentator and the fact that it was no unusual thing to commit to parchment illustrations of this nature. "Patterns in paper," "portraictures," "patterns in timber," are referred to in the contract for the Beauchamp chapel at Warwick in 1439; but during the earlier centuries of our national architecture it is likely that models in wood, or drawings upon wooden tablets, were in general adopted as specifications by the contracting parties and referred to during the progress of the work. Admitting this to have been the case, length of time and the nature of the material may account for the present non-existence of records which would have been so interesting. A mutilated figure in stone, some years ago removed from a niche or housing on the tower of Durham Cathedral, holds in its hands a church, carved in the same material upon a small scale, and of the Norman period. This figure may either represent the bishop who planned the work, or the mason who carried it into execution, but in either case we have here a proof that our ancestors practised the art of modelling upon a small scale, the point for which we are contending. Again, what is still more important to our object, there is in Worcester Cathedral, according to Carter, in the spandrel of an arch, a representation in stone of an architect presenting the design of a building to a superior personage, who is examining it with attention. Fully agreeing with Carter as to the general purport of this valuable memorial, his explanation overlooks an important fact. The drawing on tablets is in the hands of an ecclesiastic, but instead of having just received it for his approbation from the builder who is sitting near him, we believe him, after having designed it himself—for it could be easily proved that our early architects were in general ecclesiastics—to be in the act of proposing it to the builder as the pattern to be imitated in the contemplated work. At all events, the drawing is on tablets—another proof of our general theory that wood or some such material was preferred to parchment.

Francis I. and French Art.

Various causes of a practical nature have combined to place the decorative arts in the position which they occupy in France, and among these one of the most important is the munificent patronage with which they have always been favoured by the French monarchs and by the nobility. Endowed as the French sovereigns were with absolute power, there existed no bounds to the gratification of their tastes in whatever mode they might choose to indulge them. The nobles lived but in the atmosphere of the court, satellites whose minds and manners reflected only those of that star of monarchy around whom they were perpetually revolving. Their mansions were fitted up with a splendour which often rivalled, and sometimes eclipsed, that of their master's. The extravagant expenditure of Francis I. contributed of itself, in no small degree, towards creating and fostering a taste for the arts. The glories of the Louvre and of Fontainebleau still attest the magnificence of his reign. The decorations of St. Germain afforded employment to the most eminent artists of the age—the château of Muette, the hunting-seat of Chalnau, the graceful pavilion of Follembray, the magnificent palace of Chambord, the château of Madrid and Villars-Coteret were erected and embellished to gratify his own taste for display or to please the reigning favourites. The constant wars which devastated the Italian cities during the sixteenth century drove many artists from their homes whom the munificent patronage of the gay monarch induced to settle at his court. The works of Rosso, Benvenuto Cellini, Primaticcio and others contributed to diffuse among the comparatively barbarous French the knowledge of art, while the crowd of capitalists, merchants and craftsmen who accompanied them to France, by exercising in their adopted country the talents and knowledge which they possessed, assisted in imparting to its manufactures and to the arts of design generally the excellence which they have ever since possessed. At the period referred to the same individual frequently professed both painting and architecture; and accordingly, during the reign of Francis, mural decoration received its due share of attention, and a style of internal embellishment which bears his name and has descended to us is not surpassed by any specimens of the same art which have been produced in ancient or modern times.

Bedding Stones.

Attempts have been made to cast doubts upon the correctness of the generally-received opinion that it is essential to place stones on the same bed as they occupied in the quarry. With some few stones when in place, it may be true that the position of the layers is a matter of indifference; for the Roche de St. Cloud and the Villebois stone of the neighbourhood of Lyons, amongst the secondary and tertiary limestones, have been employed without reference to the planes of bed for many centuries without inconvenience. But these cases are decidedly exceptional, and even in them the powers of the stone to resist a crushing weight are less when it is applied in a direction parallel to the beds than when it is applied transversely. In almost every other case it will be found that when stones are used the wrong way of the bed—to employ a workman's phrase—they disintegrate in parallel plates. Great care requires to be exercised to ascertain the precise direction of the natural beds, because many stones present the appearance of inclined planes of deposition, which cut the beds and joints under every modification of angle. When, from the stones having been worked in the quarry, it is difficult to ascertain the precise bed, it is possible that the mason may be misled by the greater facility with which they work in one direction, and may mistake this cleavage for the real bed. The only remedy appears to be to cause the stones exposed to this danger to be marked in the quarry, but fortunately the examples of its occurrence are rare.

Armorial Bearings.

It is curious to observe how differently bearings in modern heraldry are represented from the quaint forms they anciently assumed. We deem the present more refined and life-like figures anything but an improvement upon the latter. A modern lion ramp is no more like the grim long-backed creature of old, with open mouth and "arborescent tail," than a tame spaniel is like the wolf of the mountains. All the glories of his shaggy gambs and fiery serpent-like tongue are gone. Modern heralds paint animals from nature, which is just what ancient heralds took care never to do. They even went so far that some creatures, having been traditionally and conventionally aggravated into the furthest possible point from resemblance to reality, so that it was quite impossible to say what they were originally intended for, remained fixed, as it were, in all the dignity of their nonentity, and herded into the varieties of the wyvern, cockatrice, heraldic tiger and griffin tribes. The ancient forms may be seen in perfection in monumental brasses, and it is not a little to be wished that, as the demand for stained glass increases, artists will take a hint from these sources in attaining a more correct style of painting heraldry than their works usually exhibit.

Saxon Churches.

That many of the Saxon churches were erected of stone and on plans of great complexity, with crypts, triforia, clerestories, central towers, and other parts resembling in arrangement the Norman churches, can hardly be doubted, from the descriptions that have been preserved to us. But that in dimensions and decorations they at all equalled the churches of their successors is wholly improbable. That contemporary writers should praise them as immeasurably lofty and spacious is natural, and in perfect accordance with the practice of all writers, who necessarily imagine the great works of their own age to be the greatest works possible, because they have never seen anything better or half so good. Perhaps the best testimony to their comparative merit is given by Bishop Wolstan of Worcester. He, after the Conquest, had erected a new church there to replace the Saxon church which his predecessor, Oswald, had built (*c.* 980). It was on a different site, and when the new church was sufficiently advanced to be occupied by the monks, he ordered the old church, the work of the blessed Oswald, to be unroofed and pulled down. But Wolstan standing in the open air and looking on could not restrain his tears at the sight, saying, "We wretched people destroy the works of the saints that we may get praise for ourselves. That age of happy men knew not how to construct pompous edifices, but they knew well how, under such roofs as they had, to sacrifice themselves to God and to set a good example. We, alas! strive that we may pile up stones, neglecting the while the care of souls." Whatever allowance may be made for the Saxon feelings of Wolstan, himself a Saxon bishop among Normans, and therefore in all probability unfriendly to the new modes, yet the phraseology necessarily implies a strong and undeniable contrast between the Saxon and Norman practice and manner of building, and an apology for the inferiority of the former.

The Spiritual in Art.

An art which enters the mind through the senses cannot be wholly spiritual; its spirituality is, after all, but a special phase of materialism. A disembodied spirit may exist—a disembodied art cannot. It therefore becomes important to inquire in what mode and by what means any art can become spiritual, or, again, by what inverse process thought may become material? It is evident that mind cannot create material forms out of nothing; that it must first come in contact with matter before it can mould that matter according to its will. It is a mistake to suppose that art-types, however apparently the offspring of mental growth, can have had an independent spiritual origin. Art has not originated, like mathematics, by the pure deduction of reason; on the contrary, it has grown and reached maturity through observation and induction founded on the study of nature. The art of the cloister resembled too closely the philosophy of the Middle

Ages; and both alike promising much, failed from the same causes to render art or knowledge efficient instruments for human progression. It was not till observation and the deliberate study of nature formed a wide and certain basis for an inductive philosophy, that art and science entered on that sure career which knows no limits in the promise of advancement. It was this appeal to nature which gave to a worn-out art, in this its new progress, a never-ending variety in an exhaustless beauty and an infinite truth. The artist, who once in seclusion had woven as a shroud the mazy cobweb of mystic and entangled thought and dreamy form, now walked the wide earth in search of its manifold treasures In the building up of an art-philosophy, in the right reading of art-history, two opposite errors originating in partial truths must be guarded against. The spiritualist unduly enhances the spiritual elements; while, on the other hand, the materialist as exclusively insists on the implicit rendering of nature. Each of these positions is both true and false—true when the one is limited and controlled by the other, false when either becomes exclusively paramount. The difficulty lies in assigning to each its due and lawful province. The personality of art is analogous to the personality of man. It is difficult to tell where spirit ends and material existence commences—to ascertain the laws and functions of each, and the relation which the one holds with the other. Art, like man, is neither wholly spiritual nor exclusively material; each element overlaps and blends with the other; from one point of view it would appear that the outward bodily form regulates the spirit, and again the spirit would seem to fashion and govern the outward form. Certain it is that between the two elements there is an indissoluble union; that art has at once a body and a soul, and is consequently subject to the joint operation of physical and spiritual laws. The sane mind in a sound body is not less essential to a work of art than to man himself.

Stained Glass.

In the purest times of the art, the principle was invariably observed of merely ornamenting the spaces between the mullions with distinct and appropriate embellishments. The filling a whole window with one large picture, as at King's College Chapel, is a sign of the debasement of the art. Magnificent as these windows are, had those which once adorned the Decorated chapter-house at Ely remained entire, instead of a few discoloured fragments, they would probably have been acknowledged to be vastly finer from the avoidance of this fault. The wretched specimens executed at the close of the last and the beginning of the present century, such as the "washy virtues" in St. George's Chapel, Windsor, and the windows at New College, Oxford, are all, among other grievous faults of design and detail, open to this objection. The noble windows in King's Chapel, which present such a transcendent display of artistic painting and of unrivalled tinctures, though very late, are by no means so faulty in this respect; since the design comprised in each light, though forming but part of a picture, will be found generally to be in great measure complete in itself. The ancient painters always took into account distance. Examine closely a fragment of old glass, and we shall find the lines so rude and coarse, often so harsh and irregular, that we are almost surprised at their beautiful effect when seen from afar. In much of the modern work too great nicety and minuteness of portraiture is affected, by which much of the spirit and graphic reality which might have characterised bolder outlines is inevitably sacrificed to the ambition of producing a fine painting.

Correspondence

Ventilation of Geysers.

SIR,—Our attention has been drawn to newspaper reports of an inquest held by Mr. Drew, at Hammersmith, which was held on the 14th inst. on the body of a boy, who died on the previous Monday from carbon oxide poisoning, after bathing in a room supplied with hot water by a gas geyser.

The reports do not state the one important point, viz. that the geyser was not supplied with a ventilating pipe. It is stated that the apartment measured 256 cubic feet, and that the doctor said that the space should not have been less than 700 cubic feet. In the public interest it is of immense importance that the matter should be clearly understood. Of course, if a room is of sufficient cubic contents, the poisonous fumes from the gas would have proportionately less effect, though with all respect to the doctor, we do not think in a room even of 700 cubic feet dimensions it would be very safe to use such a quantity of gas without a ventilating pipe, but the fact is that the majority of bath-rooms are, and must always be, of small dimensions. It is therefore absolutely necessary to insist that no geyser should be fixed in a bath-room without a separate pipe to convey the fumes outside the apartment. It is not sufficient to insist that the bath-room must be ventilated, because all ordinary ventilators can be easily closed, and any careless bather feeling a draught would take upon himself to close them while bathing.

We make no apology in asking you to spare space in your influential organ to draw attention to this important fact, that unless the public is made to understand that a geyser can only be made safe in an ordinary bath-room by having a ventilating pipe attached to it, such accidents as that which occurred on Monday will inevitably occur again.

We may add that the question is not one of the difference between a luminous flame and a bunsen Burner. If there is any difference in the mischievous power of one flame over the other it is so little that it does not affect the question. Every gas flame, as is well known, throws off injurious products. The very usefulness of a geyser depends on the fact that it consumes a large quantity of gas in a very short time, consequently there must be a large escape of poisonous fumes. We are quite sure that there is no other way of using these now indispensable machines safely, except by fixing separate fume pipe to every geyser.—Your obedient servants, EWART & SON.

GENERAL.

The Goldsmiths' Company have made a grant of 250*l.* to the building fund for the second portion of the permanent buildings of the Church House, the west front block.

The Thirty-fourth Annual Convention of the American Institute of Architects, held at Washington, commenced on the Wednesday and came to an end on Saturday of last week.

The Deaths are announced of Mr. Francis Chambers and Mr. Horace Gundry, two London architects in established practice. The latter was district surveyor of Paddington.

Mr. William Mather, head of the engineering firm of Messrs. Mather & Platt, has been placed on the select commission to inquire into the conduct of affairs at the War Office.

Mr. E. A. Abbey, R.A., has commenced on the tenth panel in the ambulatory of the Royal Exchange. It is being presented by the Skinners' and Merchant Taylors' Companies, and commemorates the founding of their annual feast on the Eve of St. John's Day.

Professor Arthur Thomson, of Oxford, has been elected professor of anatomy, and Mr. Alfred Gilbert, R.A., professor of sculpture, in the Royal Academy.

The King of Greece has presented the Louvre with the ancient statue of Neptune recently discovered at Milo, and which stood at the entrance to the Greek Pavilion during the Exhibition.

The French Government has given orders that the works of art sent from China by General Frey, the commander of the French force, and others, shall be detained at Marseilles and not forwarded to President Loubet.

Mr. H. Von Raalte has been elected an Associate of the Royal Society of Painter Etchers and Engravers.

The Crypt of the Cambodian Temple erected in the gardens of the Trocadéro is to be preserved.

M. André, landscape architect, has been raised to the rank of Officer in the Legion of Honour.

The Design by Messrs. Briggs & Wolstenholme and Stones & Stones, joint architects, was selected in the limited competition for new police courts, police and fire brigade station and firemen's dwellings, Blackburn. The assessor was Mr. A. N. Bromley, and the other competitors were Messrs. H. T. Hare, J. G. Gibson, Woodhouse & Willoughby, Cheers & Smith, and Sames & Green. The cost is to be 40,000*l.*

A Bronze Statue of Gutenberg has been unveiled in Vienna. The famous printer is seen standing upright, with a long mantle covering his tall figure, and wearing also a broad cap.

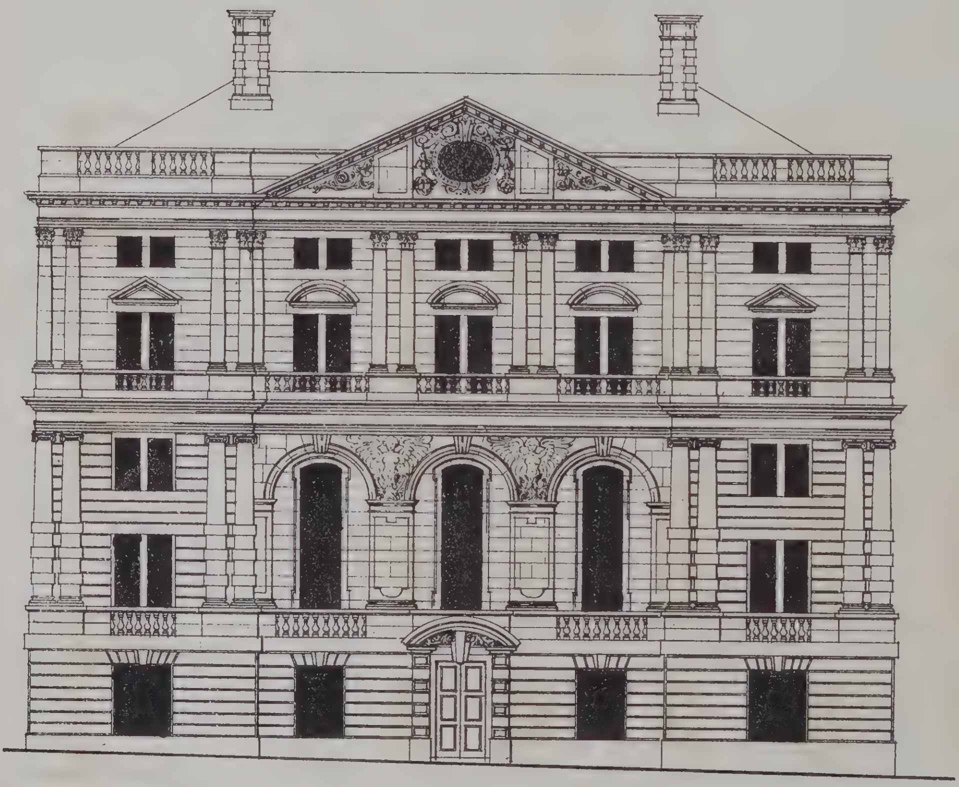
M. Van Driesten has founded in Paris an International Society of Miniaturists, which is not to exceed thirty members.

A Max Müller Memorial Fund is being raised by the University of Oxford, the proceeds from which, after providing for some personal memorial, such as a bust, relief, or portrait, should be handed over to the University of Oxford and held in trust for the promotion of learning and research in all matters relating to the history and archæology, the languages, literatures and religions of ancient India.

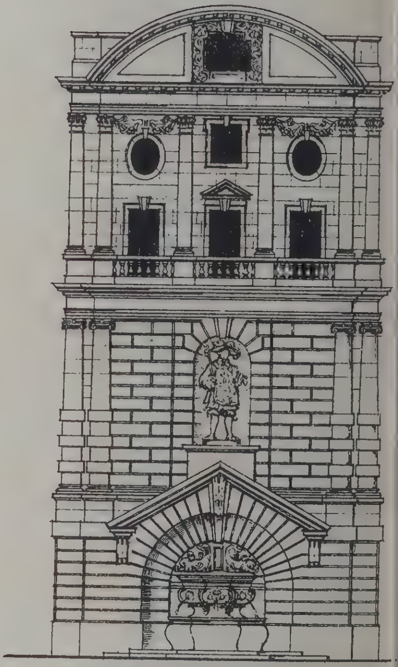
Lord Strathcona has offered to contribute 25,000*l.* to the Aberdeen University if within a year 50,000*l.* more were raised to complete the buildings and properly equip them. Mr. Charles W. Mitchell, of Newcastle, is also willing to pay off the whole of the present debt on the University buildings if it does not much exceed 20,000*l.*

LIBRARY
OF THE
UNIVERSITY of ILLINOIS.

HOLBORN AND STRAND IMPROVEMENT   THE MORNING POST

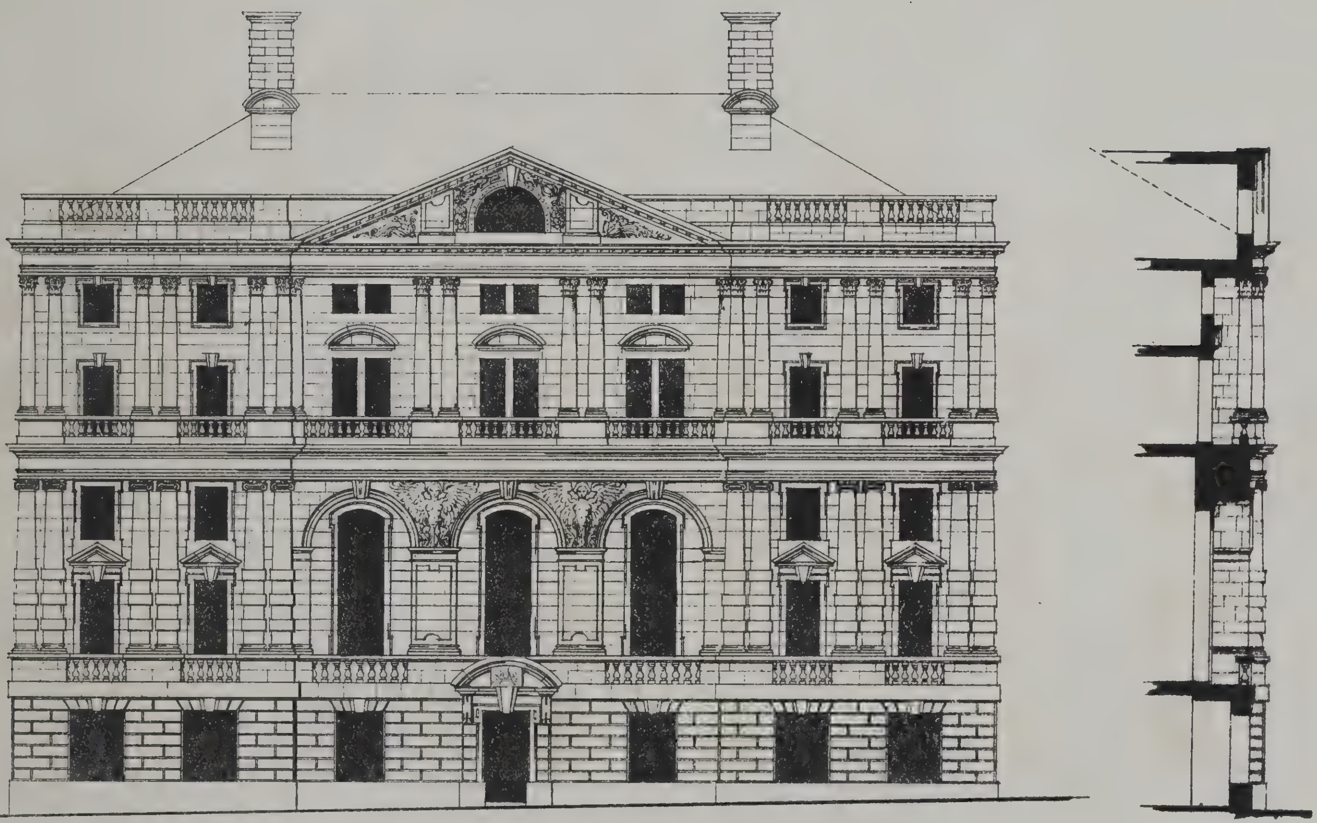


WEST ELEVATION



SOUTH ELEVATION

THE LONDON COUNTY COUNCIL HOLBORN

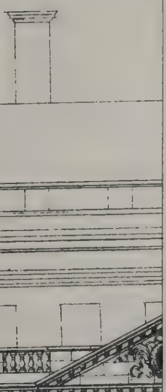


EAST ELEVATION

PHOTO-LITHO. SPRAGUE & Co LTD 4 & 5 EAST HARDING STREET, FETTER LANE. E.C.

STRAND IMPROVEMENT. DESIGN No. 23.

OF THE
UNIVERSITY of ILLINOIS.



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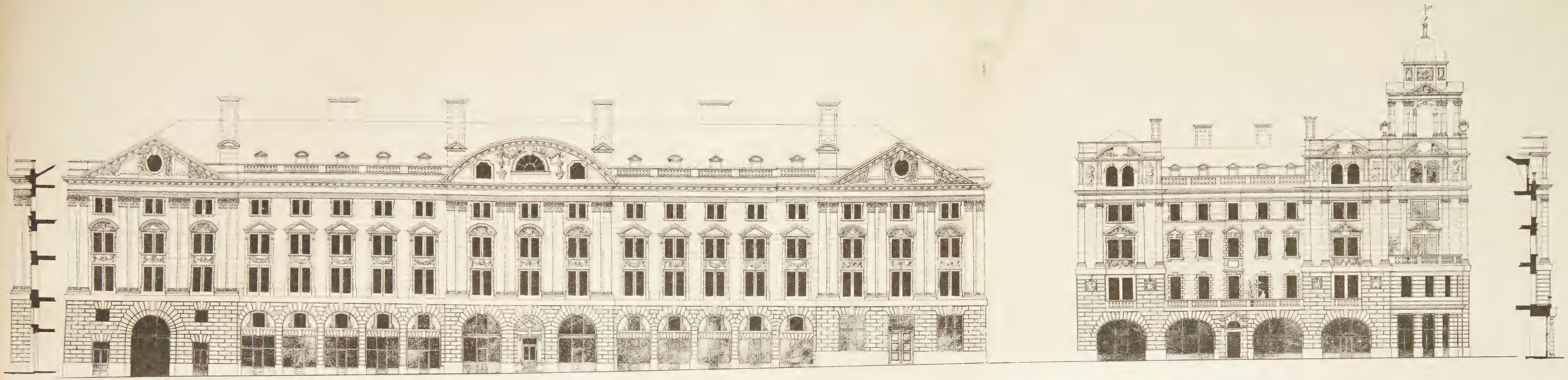
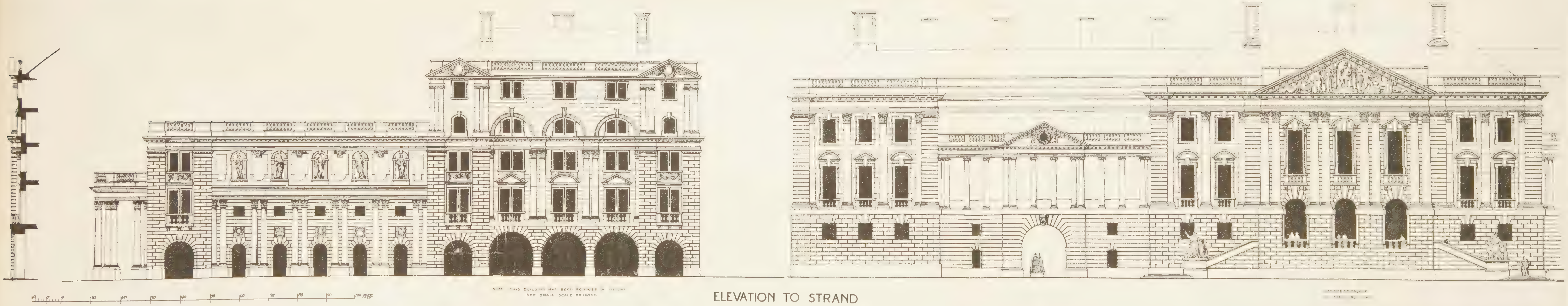


NORTH ELEVATION OF CURVED STREET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SEE SMALL SCALE DRAWING
10 5 0 10 20 30 40 50 60 70 80 90 100 FEET
CENTRE OF FACADE

ELEVATION TO STRAND

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THE LONDON COUNTY COUNCIL HOLBORN AND STRAND IMPROVEMENT. DESIGN No. 23

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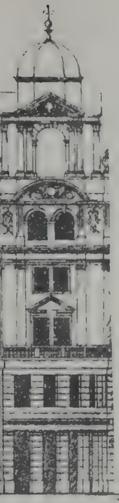

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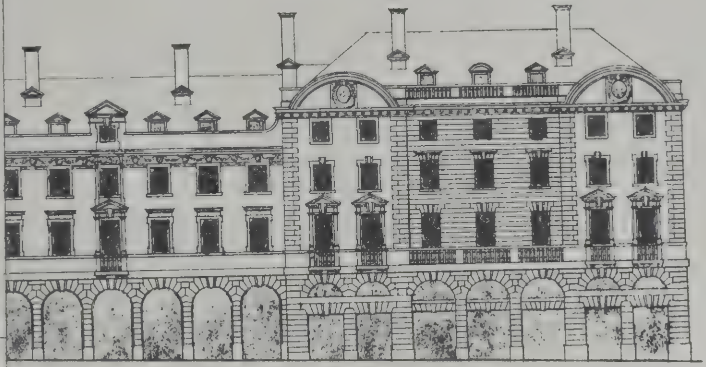

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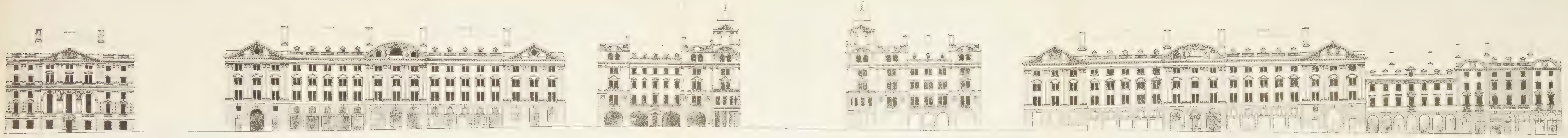

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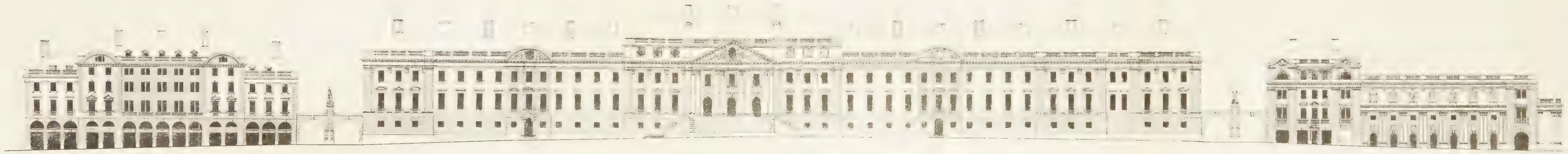

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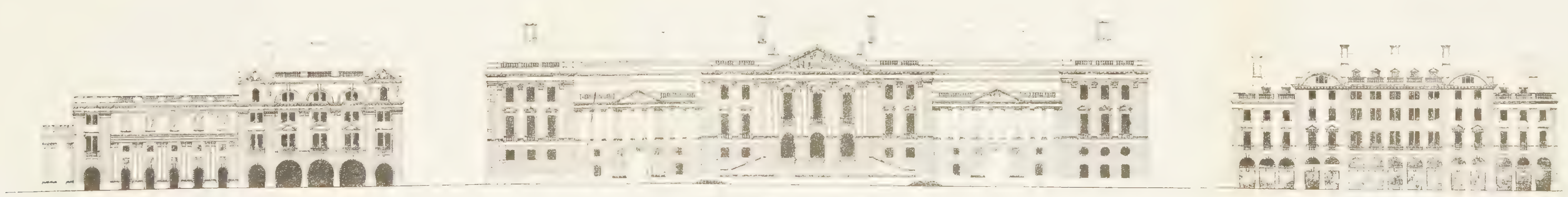

ELEVATION TO STRAND

The London County Council Holborn and Strand Improvement. Design No. 23.

The Architect.

THE WEEK.

It is fortunate for the South Kensington Museum that a measure resembling one which is now before the Spanish Cortes, and by which the exportation of works of art is prohibited, was not in operation when Sir J. C. Robinson was exploring Southern Europe, for in that case many of its treasures would have failed to have reached England. The Spanish Collection, although not rich in pictures, is one of the most valuable to be found in a foreign museum. Unfortunately the Bill in question may be of little use in preserving Spanish antiquities. By one of the clauses the Government reserves to itself the right to expropriate objects which are at present private property. It is well known that the expropriations of the Spanish Government during the civil wars of 1833 to 1840, and the injudicious law of expropriations of 1869 for the purpose of collecting artistic objects, have brought about the destruction and disappearance of numberless works of art. The owners were willing to suffer sacrifices rather than allow their property to be taken at Government prices, and after thirty years it is possible they are not more disposed to be submissive.

At one time teachers of Greek and Latin in schools and colleges never aimed at any higher result than to enable students to frame sentences in those languages by which their difference from English construction would be manifested. To know how to use the old words properly was a trial of skill, but when the words referred to the objects which surrounded Greeks and Romans, and to various classic customs, there was no way known to acquire definiteness. It is no wonder so many students grew wearied of tasks which presented insurmountable difficulties to them. Of late years efforts have been made to have studies illuminated by classical archæology, and with the assistance of engravings in books on the subject, the labours of masters and pupils are lightened. At a recent conference of head masters the teaching of archæology in schools was introduced by Dr. Gow, of Nottingham. He said that the main function of archæology was to quicken their imagination in order that they might realise the everyday life of the men who made the history and literature they were studying. More vividness would be given, he said, to the classics when archæology aided. He proposed that precise information and advice on the question should be sought. There was no opposition to the proposal. It would not involve great expense for every public school to acquire a collection that would be a potent auxiliary to the lexicons. Even private schools could be easily enriched in that way. If casts from ancient examples were found too costly photographs are available on economical terms, and from the inspection of them much knowledge would be acquired.

The main roads in Shepherd's Bush, Hammersmith, Chiswick and Turnham Green present a novel appearance. Standards are erected and overhead wires are laid for an electric tramway; but in spite of the completeness of the arrangements, the cars are still drawn by horses. New cars are ready and the machinery for supplying the current to drive them has been set up and can be utilised at a very short notice. But there is an imbroglio which is not easily overcome. The observatory in the park at Kew, which, among other purposes, is used for recording the daily variations of the earth's magnetism, possesses delicate instruments and apparatus which would be affected by the disturbances which are likely to arise if electric trams are at work in the neighbourhood. The authority to deal with such a case is the Board of Trade, and the officials have been engaged for some time on the subject. The tramway company appear to be willing to meet the Board, but the full extent of the requirements remains at present unknown. It cannot be doubted that electric traction is now in favour, and if the tramways could be opened much advantage would arise to builders. In the western district to be traversed there are large tracts of land which could be utilised for the building of houses, and which are now useless owing to the difficulty of communication with the centre of London. There are no peculiar advantages which make the grounds at Kew the most eligible site for a magnetic observatory, and the instruments would be no less efficient if removed to some other district more remote from habitations, with all the contingencies which arise from the employment of electricity.

The principal purpose of civil engineering is sometimes said to be the facilitating of communication between distant places. If so there ought to be much rejoicing in the Institution in Great George Street over the projects which relate to the Metropolis. In addition to the various underground lines various tramways are announced. The London County Council propose to expend nearly a million sterling on them, including a generating station. The length of the tramways proposed to be laid down is upwards of 28 miles, the longest sections being from Lower Richmond Road to the northern end of Battersea Bridge, and thence through Chelsea, Westminster, and along the Victoria Embankment to Blackfriars Bridge, and from Scrubbs Lane, Hammersmith, to Fulham High Street. In addition it is proposed to expend over a million on street improvements at New King's Road, Fulham; King's Road, Chelsea; Blantyre Street, Cheyne Walk (including the construction of two new streets); Scrubbs Lane, Brook Green Road, Fulham Palace Road, High Street, Fulham; Richmond Road and Woodstock Road, Hammersmith; Red Lion Street, South Street and Garrett Lane (Wandsworth and Tooting); South Terrace and Bolingbroke Green, Battersea; Denmark Hill, Champion Park, Lordship Lane, London Road, Merton Road, Harleyford Street and Camberwell New Road. In several cases the Council propose to take a portion only for the improvement or widening of the roadways—fore-courts, gardens, or private pavements.

The past year cannot be considered as remarkable by frequenters of auction-rooms where works of art were sold. The most important collection which changed owners was that belonging to Sir Robert Peel. The amount realised was 62,146*l.* One of the most interesting lots was the bust of Sir Walter Scott by Chantrey, which realised 2,250*l.*, a remarkable sum for a modern bust. It is generally supposed the bust was the original from which countless casts were derived, and which popularised Scott's head and familiar expression. The Drayton Manor bust which was presented to the statesman was, however, an independent creation by the sculptor, and it is believed no casts from it were ever taken. Works by English artists of repute generally were sold at liberal prices. Among others were Millais's *The Boyhood of Raleigh*, 5,200 guineas; Leighton's *Helios and Rhodos*, 2,750 guineas; W. Collins's *Winter Scene on the Thames*, 2,000 guineas; David Cox's *Going to the Mill*, 2,000 guineas; C. Stanfield's *Guarda Costa off Fuentarabia*, 1,750 guineas; Millais's *Cuckoo!* 1,550 guineas; Hoppner's *Portrait of Himself*, 1,500 guineas; Millais's *Forget-me-Not*, 1,500 guineas.

According to the "Catholic Directory," the whole of the exterior of the new cathedral at Westminster, with the exception of the outer roofing of the aisles and transepts, the roofing of some of the side chapels, the portico and about a third of the campanile, was on December 1 nearly complete. The internal decoration will necessarily extend over many years, but the structural work of the interior is so far advanced as to give some hope that the cathedral may be opened in July next. From the beginning of the work in 1895 the payments made to the contractors, Messrs. Shillitoe & Son, of Bury St. Edmunds, for labour and materials, to the architect and clerks of works, have amounted up to December 1 to 134,666*l.* The total cost of the structure cannot as yet be known, for the cathedral is being built "by schedule"—that is, the price of every kind of work having been fixed by contract, the work is paid for according to its quantity, as ascertained from time to time by measurement.

AUXILIARIES TO BUILDING.

WHETHER the nineteenth century is to be remembered with respect in the history of architecture, or is to be regarded as no more than a part of a dull and mechanical age, are questions which are not adapted for discussion during holidays. So much has been spoken and written about architecture, it was inevitable that a high theoretical standard should be formed. But there is a vast difference between the indefinite creations of the imagination and designs on paper, and the difference is still greater when buildings are erected. There has been so much disappointment over the results of what we may call mental architecture in comparison with those of actual architecture, that a great many men now appear to have abandoned the expectation of seeing noble buildings, and trust altogether to what can be accomplished by representatives of the arts and crafts to atone for the deficiencies.

Whatever may be said about the buildings, it is beyond dispute that the nineteenth century has been marvellously productive in affording means by which the architect's work is facilitated, and buildings become more useful if not more beautiful. Building is, of course, a very ancient art, but it is not sufficiently realised how much of what gives character to modern examples is of no older date than the nineteenth century. So much is said about the excellence of ancient work, people ignore the shortcomings which were to be found not only in private dwellings but in public buildings, and which were unavoidable until the present century. The improvements which have been introduced since 1800 are so numerous it would need a large volume to describe them. We are, therefore, compelled to give no more than a slight indication of what has been done in various divisions relating to building.

The principal building materials in the last century were stone, brick and timber. There may not have been many new varieties of stone discovered during the century. But machinery has been invented which has facilitated the operations of the quarryman in various ways. Stones can now be produced in definite sizes, and costly marbles in plates for surface decoration, without requiring much manual labour, while polishing is no longer so costly a process as to become prohibitive to use. There are, of course, purists who will regret all superseding of hand-labour, and stone which is prepared by machines is by some considered as wanting in architectural character. But, on the other hand, it should be remembered that without machinery it would be impossible to erect the numerous buildings which the necessities of the time demand. The century has also produced artificial stone with qualities which are not also found in stone derived from quarries. What is true of stone is to some extent applicable to the production of bricks. The machinery and the superior organisation of brick-works enable quantities to be produced which would appear incredible to the brick-makers of the last century.

The inventive spirit of the nineteenth century is, however, more manifest in the treatment of clay, under the form of terra-cotta. The material is no doubt derived from antiquity; but, speaking generally, it can be said that terra-cotta was a sculptor's rather than an architect's material. In Italy it was for a time used in certain buildings which continue to be of great interest. But until the nineteenth century it was not in England accepted as a substance which could be obtained as readily as ordinary bricks. Whenever the industrial history of the nineteenth century is written, the production of terra-cotta should hold a prominent place in it, for the material has had a marvellous effect upon the modern architecture of this country.

There are other applications of clay which also claim to be noticed. When old English dwellings were adopted as models for imitation, very high prices were given for ancient tiles. They had the advantage of softened colour. But one reason for obtaining them arose from the difficulty of getting any of the size and quality required from modern manufacturers. The difficulty has been overcome, and a variety of tiles can now be had all over the country at moderate prices, yet fine in colour, and at least equal in quality to those of an earlier time. Tiles of another variety should not be overlooked. The excellence of the encaustic tiles which were produced to meet the requirements of revived Mediævalism, often tempted church folk to employ them too liberally. But the sense of measure is frequently denied us in England, and the extravagance in applying tiles does not diminish in the least the value of the manufacture. Other kinds are now in request, and whether we look upon those which are of the purest white and help to make darkness less visible in many places, besides having a look of cleanliness, or the brilliantly painted tiles in the production of which able artists often co-operate, we must feel grateful to the manufacturers of the nineteenth century who have turned clays to such good account. Nor let us forget the remarkable applications of pottery to sanitation. Indeed, without the aid of the potter it is difficult to see how drainage works within and without the house could be attempted on the large scale which now prevails in England. Bramah's closet was an invention of 1778, and there is no doubt it was one of the pioneers in sanitation. But only a comparatively short period has elapsed since the inventive powers of the potters created the revolution which he commenced. The colossal drainage pipes with all their appliances, baths, traps, lavatories, sinks, &c., testify to the ingenuity of British potters, and have done more for the promotion of public health than an army of physicians.

It may appear absurd to claim concrete as a production of the nineteenth century. It is needless to say the material dates from a remote age, and was largely employed by Roman and Mediæval builders. In the last century so little use was made of concrete, the word as a term in building was unknown to Johnson and other dictionary-makers. At the beginning of the century its use was revived, as a means of obtaining a solid mass which would serve for a foundation whenever the ground was not sufficiently firm. It was for foundations alone that concrete was employed by Sir John Soane in the public buildings at Westminster; by Inwood at the Westminster Hospital; by Savage at the Inner Temple; and by Abrahams at the Westminster Bridewell, where a sum of 30,000*l.* was spent on foundations, and about 60,000 cubic yards of concrete were deposited. Ranger was the first to realise that concrete might also be used for building walls, and a guard-house of the material was set up in St. James's Park, but the experiment was not a success. At a subsequent time it was employed for fireproof flooring, and with undoubted advantage.

Floors of the kind would be impossible without the aid of iron girders. It so happens that an iron girder was not to be found in any building prior to 1801. Cast-iron was undoubtedly made use of in bridges during the last quarter of the eighteenth century, but it was in the form of arches. When Phillips & Lee, of Manchester, resolved to erect a large cotton-mill in 1801, it was arranged that cast-iron beams and columns should be used in it. Boulton & Watt undertook the commission for the ironwork, and the first cast-iron beams were therefore designed by the great improver of the steam-engine. His beam was $13\frac{1}{4}$ inches deep, $1\frac{1}{4}$ inch thick, and with a single flange at the bottom $3\frac{1}{4}$ inches wide. Eaton Hodgkinson considered that Watt had made a tolerably correct approximation to the true proportion of the parts of a beam so as to secure a maximum of strength with a given quantity of material. For about a quarter of a century Phillips & Lee's mill was taken as a model for similar buildings. Fairbairn was in the meantime busy in erecting cotton-mills in Lancashire and Yorkshire with cast-iron beams to carry the floors. He increased the size of the bottom flange, but did not introduce a top flange. In 1827, as he was dissatisfied with the existing knowledge on the subject, he engaged Hodgkinson to make experiments on beams. After a long and costly inquiry it was ascertained that the section of a cast-iron beam which provided the greatest strength was one having the lower flange six times the area of the upper flange. Efforts were afterwards made to increase the strength of the cast-iron beam where it was weakest by means of wrought-iron truss rods. But the new beam was found to be a disappointment.

Fairbairn next turned his attention to the substitution of wrought-iron plate beams for those of cast-iron. He employed box beams as well as single-web beams, which were made at his works. He also recommended the iron-masters to produce rolled girders for the sake of economy, and he predicted that having them, cast-iron would no longer be employed, and buildings would be less likely to collapse and become more secure against fire. With rolled beams builders were able to employ systems of construction superior to those in use in France, and a most important industry was created. The necessity of fireproofing is shown by the fact that up to 1844 there was only one of the big warehouses in Liverpool which could be said to be constructed of non-combustible materials. In the improved floors concrete played a great part and answered the expectations which had been formed about it.

It is not only in girders, stanchions, columns and roofs the co-operation of ironworkers with builders can be seen. Sanitation owes much to the founder. There has been a revolution in the heating and ventilation of buildings such as would be impossible in the preceding century. The varieties of improved fireplaces are almost countless. Then there are the numerous systems in which warmed air, hot water and steam are utilised. To some extent a new factor has also to be considered, viz. heating by electricity, which is an unquestioned specialty of the century.

In no way is the difference between the eighteenth and nineteenth century more marked than in illumination. Murdoch, who was engaged with Boulton & Watt, was able to light his own house with gas in 1792, but it was not until 1810 that arrangements were made which enabled several houses to derive gas from a common receptacle. Various improvements have been introduced from time to time, but it cannot be said there is an end to them, for competition with the electric light has done much to produce brilliancy and softness of light which would have amazed Murdoch, Winsor and Clegg. Electric lighting must be considered as still in the period of youth, for twenty years ago it was not accepted as a feasibility. We cannot suppose the law of progress will be inoperative with it, and we may therefore look forward with confidence to more perfect arrangements, although there may be difficulty in pointing out where the improvement is needed.

Let pessimists say what they will in depreciation of the nineteenth century, it cannot be doubted that an incredible amount of inventiveness has been expended in the service of architects and builders. In no other business are there more auxiliaries or more loyalty shown in doing excellent work without exacting any public acknowledgment of it. The sub-contractors who are masters of specialties employed in connection with every important building form a most important body, and they deserve more appreciation than they commonly receive from those who have the benefit of their skill and experience. For it should be remembered that the latest inventions must be superior to those which preceded them, otherwise they would have no chance of success.

EGYPT: ANCIENT AND MODERN.*

Among the ancient Egyptian symbols was the "tat," which, as denoting stability, was often applied to the god Osiris, the most benign of the deities. As we look back now at the history of Egypt that sign appears to be the one which should be generally accepted as characteristic of the country and of the art of the inhabitants. Everything in Egypt must have appeared to the early thinkers among the people to have that quality of stability. It is a monotonous country, and the monotony was always enduring. When, as elsewhere, the earth is diversified by mountains and valleys, men can realise the immense forces of nature which are continually producing physical changes. But the oldest patriarchs in Egypt were unable to see any differences between the surroundings upon which their eyes first opened and those on which they were soon to be closed. The long strip of fertile land which bordered the Nile had its regular alternations of barrenness and productiveness. There was little difference in the sky throughout the year, and if the eye wandered towards the low and naked mountains the intervening space was only a pathless desert.

The influence of nature on the minds of man in the early days of the world was likely to have been more powerful than at the present time. Every country is now so largely occupied, the inhabitants take priority of the land in our thoughts, and all scenes have been so often described and analysed and made the subject of scientific investigations, most landscapes have ceased to excite emotions. Even the poets are not now disposed to make much use of the earth for their similes. We have no poems to reveal to us whether Egypt possessed a Wordsworth, but it is manifest that in their art we can see efforts by the Egyptians to express the spirit of that mute nature which surrounded them.

The temples, for example, possess the stability which makes them enduring offerings to the gods. Time was without effect upon them, and the atmospheric conditions were of altogether a different kind from those of which we have experience in Western Europe. The sculptor's work was of a kind that was especially adapted to resist both time and weather, although they might be infinitely more powerful. The figures were not always made salient, as in later sculpture, and consequently had not to bear the brunt of the attacks by winds and rains. The painting was executed in a manner which guaranteed endurance. The forms of the buildings were remarkable, especially if compared with what was found in most of the countries which the Egyptians could have visited. The Pyramids might have been erected to defy time; and the massive columns of the temples were out of proportion to the weight which was to be sustained. When the sculptors executed statues which were to stand apart, they were not forgetful of the lessons which were taught by the Temple reliefs. The artists were indifferent about the representation of figures in action, and whether they were depicted as seated or standing, they had the appearance of beings who were capable to remain in the same position for countless ages.

Mummies also suggest the belief in the necessity of opposing nature by imparting to the frail human body which must inevitably decay some of the qualities of stability. The soul, it was believed, might have to pass through many transformations, but no matter how many thousands of years were occupied in the process, sooner or later it returned to the body. By the expenditure of two or three hundred pounds that body could be preserved in a condition of which the returned visitant need not be ashamed. Animals as well could be provided for after their transmigrations, suggesting that the Egyptians believed that change of any kind when it occurred could only be of a temporary character, and that sooner or later living beings returned to the Nile Valley, which was the happiest of all territories.

By a curious coincidence many other countries contributed to the belief that Egypt, from its peculiar power to overcome Time, was unlike all other parts of the known world. The old legends about Helen seem to be incomplete while her wanderings were confined to Greece, and, accordingly, the daughter of Zeus was described as having had an experience of life in Egypt as if it were a necessary preparation for immortality. Extremes often meet when we are dealing with antiquity, and it must have been owing to the attraction of some unexpressed but potent belief which in the early stages of Christianity peopled the Thebaïd with ascetics and created the primitive monasticism in Egyptian caves. Whatever were the defects of the faiths of Egypt, there can be no question of the confidence in the immortality of the human soul, and it is possible that men fled from a pagan world to a country where the doctrine might be assumed to be in the air. In most things men desired to see the power of the "tat" prevailing.

When, over fifty years ago, Gardner Wilkinson prepared the first Murray's "Handbook for Egypt" the country was in a state which suggested that the old order was not likely to change. It is only necessary to glance over the pages of the tenth edition to find evidence that Egypt, although it has long been dilatory, cannot resist the universal law. Some parts of Egypt are now being subjected to modernising influences. They would have been more marked if the spirit of the people was disposed towards Western ideas. It happens, however, that what we see of the new order of things has been forced upon the country, mainly by Englishmen. The Suez Canal must be credited to France, but it would be a bankrupt concern if it were not for English support. Over 70 per cent. of the traffic which passes along it goes under the flag of this country. With that exception the monopoly of the most important works which are described in the Handbook may be regarded as English.

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* *A Handbook for Travellers in Lower and Upper Egypt.* Edited by Mary Brodrick, Ph.D. London: John Murray.

Beginning at Alexandria, we are told that the breakwater and the inner works of the port were constructed by English contractors. In the breakwater are laid "nearly 27,000 blocks of concrete or artificial stone weighing 20 tons each." The drainage of Alexandria falls into the east harbour, but a new sewer is to be constructed at a cost of 260,000*l.*, which will empty itself eastward of the ancient Lochias. We are also told how "a fine boulevard, 150 feet in width and two miles in length, will be left free on the town side of the wall for promenade, public gardens, &c., and the remaining space utilised for building purposes." The map of Alexandria shows the great difference between the old and the new systems of laying out streets, and, as elsewhere in Egypt, modernity and antiquity appear to be in conflict.

Rosetta, which is about forty miles from Alexandria, has declined in population from 25,000, the number at the beginning of the century, to 16,560. It is said that the former flourishing condition is shown by the style of building, which is very different from that in other Egyptian towns; in the various open spaces lie numerous columns of granite and marble. The columns at the doors, the neatness of the wooden windows, and the general appearance of the walls are particularly striking. The excellent buildings, however, had to succumb to the commercial advantages offered by Alexandria. Another town which has suffered by the advance of Alexandria is the ancient Damietta. Although it has 43,000 inhabitants, "there is only one small inn."

In the description of Cairo the Handbook gives the following account of the Commission for the Preservation of Monuments of Arabic Art:—

> The Commission was composed of eight Egyptian and three European members, the latter being the late Rogers-Bey, the well-known Arabic scholar, Franz-Bey, the architect to the Wakf Administration, and M. Baudry, a French architect. A sum of 7,500*l.* was granted for the purpose of repairing buildings for the year 1882. The duties of the Commission were:—(1) To prepare a list of all buildings having an artistic or historical interest; (2) to watch over the preservation of these buildings, reporting to the Wakf Administration what repairs were required; (3) to prepare plans for the repairs; (4) to keep plans of all work done, and in the case of buildings which are completely in ruins, to indicate what parts should be sent to the National Arab Museum. The above-mentioned list of historical monuments has been completed, and a sub-committee regularly inspects them and reports on necessary repairs and reconstructions. Most of the monuments have been put into a safer condition, and their general state is far better cared for, cleaner and better guarded than it was a few years ago. Much, however, still remains to be done, and the annual Government grant of 4,000*l*E. is insufficient to meet the necessities of the work, which requires an annual budget of fully 10,000*l*E. The adequate repair of the great mosque of Sultan Hassan alone, which is in a dangerous condition, would absorb the whole of such a budget if it were carried out in a single year. The Commission also needs full powers to expropriate private possessors of historical palaces, houses, mosques, &c., which they refuse to maintain in proper order, and, further, to clear away (with due compensation) the shops which encumber the façades of the mosques The Commission has recently attempted the complete restoration of a few mosques which belong to a period well represented by similar buildings, and the visitor should inspect that of the Abû-Bekr-el-Mazhar, in the Bir-Gawan Street, as a beautiful specimen of the restorations carried out by Herz-Bey, the talented architect of the Commission, who has given the exquisite little mosque as nearly as possible its original appearance. Such restorations can only be approved, however, in rare instances, and solely when they are carried out with the care and scrupulous fidelity to the original designs which are evident in the case of the mosque of Abû-Bekr, and special precautions should be taken against the risk of falsification.

The houses in Cairo, it may be remarked, are flagged with magnesian limestone from the quarries of Masara, from whence stone was taken 4,000 years ago. The quarries are interesting, as they serve to show the process employed for cutting stone in antiquity. A visit to the Pyramids is now facilitated by the excellent road and stone bridges which cross the canals. But no new discoveries in or near them can be described. The Handbook accepts the theory that they are simply tombs. Professor PETRIE found that the four sides of the base of the Great Pyramid corresponded within an inch or two, the mean being 755 feet 8·8 inches, and the present height is 451 feet. Since 1839 no additional hollow chambers have been found in the Pyramid, although there are experts who are confident that many exist.

At one time a visit to the Pyramids was enough to gain a reputation as a traveller for any ordinary Englishman. But the mysterious Nile is now exercising more fascination, and anyone who will follow the new Handbook as a guide cannot have a nearer goal than Khartûm. In that historic town, it is announced, an hotel will be opened next month for sixty guests, and there is a Government train service with Wâdy Halfa, which runs weekly. A voyage to Khartûm will enable the traveller to see some of the greatest of the world's buildings and the most remarkable tombs. Memphis, Beni Hassan, Asyut, Dendara, Luxor, Thebes, Karnak, Esna, Edfu, Philæ are names which summon up memorable associations and the mysterious impressiveness of temple architecture.

At Kôm Omba a temple is to be seen which seven years ago was nearly concealed by sand. As in Thebes, there are unfinished wall-paintings which reveal the Egyptian method of enlarging figures by means of squares. The hieratic proportions were, however, not uniform. The Handbook informs us that in the eighteenth and nineteenth dynasties "the lower leg, from the plant of the foot to the centre of the knee, occupied six squares in height, and the whole figure to the top of the head nineteen squares. At Ombos and in other Ptolemaic buildings the proportions are somewhat different, and the figure (as in the earliest, or Pyramid period) is less elongated than in the eighteenth and nineteenth dynasties. The difference in the character of the human figure during the early Pyramid age is rather in its breadth compared with its height, and it is remarkable that statues were then less conventional, and bore a closer resemblance to nature than in later times."

In the quarries of Aswân or Syene it is evident the Romans employed the same means as the East Indian workmen for obtaining stone. Wooden wedges were introduced and then water was poured on them; the expansion was sufficient to overcome the connection of grains of the rock, and blocks of the desired depth were obtained. In spite of all the declarations to the contrary, the Handbook maintains that the new irrigation works will be destructive to the architectural isle of Philæ. "The high-water mark will be at the level of the floor of the great Temple of Isis; the little Temple of Kathor will be completely destroyed and so also will the Roman gateway. The Nilometer will be entirely under water. The lower parts of the wall and the columns of NEKTAMBO's colonnade will become coated with mud, and the wall will probably subside. PHARAOH's Bed must also gradually go, as it is now built on rock. The Coptic town will, of course, disappear."

It will be seen that the new edition of the Handbook has much in it which appeals to all lovers of Egyptian architecture. There are many excellent maps, and although containing a thousand pages, the thickness of the volume does not exceed an inch. The new Handbook will bear comparison with any or all foreign rivals.

WYMONDHAM CHURCH.

THE Priory at Wymondham was founded as a cell to St. Albans, of which his brother Richard was abbot, by William de Albini, in 1107. It appears that the founder resided in a mansion near the stream, south of the church, which mansion, together with its offices, he gave to the monks, who dwelt in it while the monastery was building, the earl removing to another place north-west of the church, the foundations of both being still visible. The precincts are said to have contained 33 acres, but as the boundary wall is very imperfect, it is impossible to say how far it extended. The abbey grounds contain about 15 acres.

The original church, which served both priory and parish, consisted of a nave with north and south aisles and transept. How it terminated towards the east we are unable to determine, as no trace of the original remains, although great care was exercised in attempting to discover it. The east end of the north aisle, opening into the transept, is very distinct, as also the demi-columns terminating the nave. The arches of the nave are lofty and narrow, ornamented with the zigzag moulding, surmounted by a triforium and a clerestory of a later period. The columns have been sadly mutilated, by cutting off the reedings to give more room, reducing them to square unsightly masses of masonry.

This state of things continued until about A.D. 1260, when a dispute having arisen between the abbot of St. Albans and the prior of Wymondham about spiritual jurisdiction, a division was made in the church, and the east end was reserved to the monks, whilst the nave or western part was given up to the parishioners. Under these circumstances it became needful that the monks should have a tower to suspend their bells in, to give notice of their services. They therefore in the beginning of the reign of Edward I. set to work, and filled up the spaces between the ninth pillar and the termination of the nave, and erected a tower over that part. This tower is finished with a handsome octagonal top, similar in character to that of the Grey Friars, Lynn, and that also which belonged to the Black Friars, Norwich (figured in the Monasticon Anglicanum), both erected about the same period. They at the same time extended their choir eastward, and in so doing carried the foundation of their walls over several graves, which are now seen arched over, making it highly probable that this part was the original burial-ground. It also appears, from the remains of clustered columns and various fragments of that peculiar moulding resembling the inverted calyx of a flower (like those on the west front of Ely Cathedral and the entrance to the lady chapel of Norwich Cathedral), that the south transept and the chapter-house, if not the whole of these additions, were erected about the same period as the tower. The entrance to the chapter-house, like the specimens referred to, had a middle column dividing it into two small arches. The arch on the east side of the tower is Pointed and about 60 feet in height, and is a remarkably fine example. On the west side are two small low passages, now stopped up, which served as entrances for the priest to the parish church. There are also two large doorways, one on the north side, formerly leading into Saint Margaret's Chapel, and the other on the south, into the vestry. The wall at the end of the north transept has on the side next the church a water-table, similar to that on the outside of the chapter-house, which would infer that it was the outside or south wall of a building, and not the north wall of the transept. The doorway in the midst is only apparent on the north side of the wall, and resembles that of an interior. The foundations of this building are said to extend about 40 feet into the present churchyard, and it was probably the almonry. In the transept are the remains of the ascent to the doorway above mentioned, and in the north-west angle those of a winding stair. On each side the choir were large chapels: that on the north is considered to have been the lady chapel; the dedication or purpose of that on the south is now unknown. The space between the latter and the chapter-house appears to have been a passage to the cloisters. The west front of the chapter-house must have had a neat appearance, if we may judge from the remains. It was divided into three compartments, each having three slender columns supporting pointed arches, the centre compartment serving as an entrance. The east end is still standing, and forms a picturesque ruin.

The foundations of the cloister and its surrounding buildings are clearly to be traced, but it is impossible to determine their internal arrangements. Blomefield says the dormitory was over the south aisle of the church. The openings of the triforium over the three westerly arches on this side of the church were found to have been filled up with solid masonry, which was plastered on both sides, and on that near the church were paintings in fresco of an early period. The first was of the floral kind, or it might be intended to represent a rose window; the next had represented in a lower compartment three skeletons or emaciated human figures, above them a cloud, and in it three other figures "fat and well liking;" the third and last had in the centre a figure on horseback, having on his head a triple crown, beneath him a wood, in which were to be seen wild beasts, with hares and hounds. Unfortunately, no artist was at hand to sketch this interesting remain, and it was so injured by whitewashing that only the general features of it could be traced.

This priory was made an abbey, A.D. 1447, on petition to the king by the prior, Stephen London, and the patron, Sir Andrew Ogard, Knt

The noble tower at the west end of the church was, according to Blomefield, begun in A.D. 1410, and carried to its present height about the year 1476, it having never been completed. The archbishop's license was not obtained until 1411, and is dated from Horncastle. It is a curious document, and shows him to have been particularly careful that the monks should not be annoyed by the ringing of the bells which were to be placed therein.

The funds for its erection were obtained by voluntary contributions, Sir John Clifton, Knt., appearing to have been the principal promoter of the work. His armorial bearings, quartering Caily, are placed over the western door. The style of this tower is like that of Redenhall Church (begun in 1460), so much admired for its beauty. The north aisle and porch, from the style of the architecture, were erected about the same period, and the beautiful carved roofs of this aisle and the nave were then put up. The ground on the south side of the church being in the possession of the monks, that aisle remained in its original state until the dissolution, when the king granted the parishioners leave to enlarge their south aisle to the breadth of 28 feet.

F. R. PICKERSGILL, H.R.A.

THE late Frederick Richard Pickersgill, one of the Honorary Retired Academicians, who died on the 20th inst. at Yarmouth, Isle of Wight, could be considered as an example of the power of heredity. His father was a painter; his uncle was esteemed as a portrait painter, and was a Royal Academician; his mother also belonged to a family of artists, for she was sister of W. F. Witherington, R.A. Born in 1820, after receiving an ordinary school education, his uncle, Mr. Witherington, perceiving in the youth a decided taste for the arts, undertook to superintend his studies, and some time was passed under the judicious guidance of his relative in drawing the figure from plaster casts. In 1839 he sent a drawing in water-colours to the exhibition of the Royal Academy, the subject of which was "The Brazen Age," as described by Hesiod, and at the end of the same year he entered as a student of the Academy; but it is singular that during the whole period of his studentship he never succeeded in the competitions for the prizes. His want of success is by no means a solitary example.

The first oil-picture exhibited by Frederick Pickersgill in 1841 at once showed his determination to seek his subjects from the least hackneyed sources. The "Trachenian Virgins" of Sophocles suggested to him the "Combat between Hercules and Achelous, the River-god, in the Form of a Bull, for Dejanira." As a first attempt in oil-painting, and of a difficult subject, the work was commendable. During the next two or three years he exhibited in succession "Amoret delivered from the Enchanter," "Œdipus cursing Polynices," "Florimel in the Cottage of the Witch," and "Dante's Dream." The committee of the Art Union of London selected his "Florimel" to engrave for their subscribers, a high compliment to so young an artist.

To the exhibition of cartoons in Westminster Hall in 1843 Pickersgill contributed a cartoon, "The Death of Lear," which elicited so much favour from the judges that the artist was in the number of the ten to whom a premium of 100*l.* each was awarded. In the "fresco competition," the following year, he was not successful. The subject was "Sir Calepine rescuing Serena;" the drawing of the figures was decided and correct, and there was some good colouring in it. Pickersgill regretted he had sent it in, for he confessed it to have been a failure so far as the manipulation was concerned. This, however, was scarcely to be wondered at, for the process of fresco-painting was then quite new to our artists. This was his first and last appearance in that style. In 1845 he contributed two pictures to the Royal Academy, "Amoret, &c., in the Cottage of the Witch," now in the Vernon Gallery, and "The Four Ages." In 1846 his only picture was a scene from Venetian history, "The Flight of Stephen Calloprini," a group of figures, the majority of them females, all drawn with admirable skill and arranged with much picturesque effect.

The year 1847 was a kind of Olympiad in art, and an epoch in the life of this artist. The great exhibition of pictures was opened in Westminster Hall, and Mr. Pickersgill achieved a notable triumph in his contribution of "The Death of Harold;" it obtained the first prize of 500*l.*, and was purchased by the Royal Commissioners for 500*l.* more. His contribution of the same year to the Academy was the representation of the performance of divine service by the early Christians of Rome among the Catacombs, showing the persecution to which the converts to the faith were subjected. The picture is full of character.

Pickersgill had now obtained a position which the Royal Academy could not but recognise; accordingly, in November 1847 they elected him an Associate Member. To their next exhibition he sent two pictures from his favourite author, Spenser—one entitled "Idleness," a knight and maiden, most felicitously expressed, and rich in colour as any Etty; the other a sparkling composition, "Britomartis unveiling Amoret." His pictures of the following year manifest a decided improvement in manipulation. His style of colouring, which had a tendency to thinness, though rarely deficient in brilliancy, was now full and substantial. The other picture, from "Orlando Furioso," exhibited skill in the attitude of motion given to the figures; they are not only gracefully drawn, but they have action. Of the four works contributed in 1850, the most important was "Samson Betrayed." One of the others was designated "Pluto carrying away Proserpine," the rest bore the titles of "A Scene during the Invasion of Italy by Charles VIII."

and "Three Sketches from the Story of 'Imalda.'" "The raising of the Standard of Charles I. at Nottingham," exhibited in 1851, was a spirited and effective sketch for a large picture, and at the same time he presented a scene from Tasso, "Rinaldo destroying the Myrtle in the Enchanted Forest." "Pan and Syrinx," a subject from Ovid's Metamorphoses, was painted in 1852, as well as the "Adoration of the Magi."

The records of the history of ancient Venice afforded subjects for two pictures in 1853, "Angelo Participazio, having Rescued his Bride from the Pirates, returns with her to her Family," and "The Arrest of Novello de Carrara" In 1855 "The Death of Foscari, Doge of Venice," was shown, and was purchased by Prince Albert.

Another work was "The Flight of Helen," a subject selected from the Choruses of the "Agamemnon" of Æschylus. In the Paris Exhibition of 1855 he was represented by his "Harold," which was lent by the Government, and which remains his most popular work. Frederick Pickersgill was not a great genius, but he upheld the Academic traditions, and during his whole professional career he was entitled to respect.

THE RECENT TAPESTRY DECISION.

NO subject has been lately so much discussed in those circles which are called by courtesy "the art world," writes a correspondent of the *Times*, as the decision recently given by Mr. Justice Byrne in the Luton Hoo tapestry case. Rich men have multiplied so much in the last fifteen years, and so many of them have yielded to the prevalent craze for collecting costly works of art, that any event which seriously affects the status of such possessions is sure to excite interest. Now among the things of which the purchase is held to be obligatory upon the man who acquires a fine house, old French tapestry holds a leading place. It is rare, it is decorative, above all it is ancien régime; and he who would wish to make his dwelling a dream of that smiling age must needs set his Louis Quinze furniture against a background of Gobelins or Beauvais. Suddenly the law comes forward with a decision which has caused something like consternation among those who have bought these high-priced panels. The case was as follows:—The late Madame de Falbe, a lady long a well-known figure in society, left at her death both real and personal property, and as is usually the case, these possessions did not all go to the same persons or follow the same rules. About the freeholds and about the majority of the personal chattels there was no dispute, but a serious question arose about certain tapestries in the mansion house of Luton Hoo. Were these personal chattels capable of being left by will, or were they, in consequence of the manner in which they were fixed, part of the freehold, and therefore not able to be dealt with as her property by the tenant for life? The executor claimed that they were personalty; the other side—those to whom the freehold passed at Madame de Falbe's death—claimed that they were permanent fixtures, and therefore part of the house. With regard to the more important tapestries, the latter have won their case, and unless the judgment is reversed on appeal, the tapestries which the lady bought and put up in her drawing-room revert to the heirs of the freehold.

There were two sets of tapestry, and the judge's decision was different in the two cases. Three pieces of Renaissance manufacture were in the hall; seven, of French eighteenth-century make, were in the drawing-room. The former were "placed loosely in large oak frames which rested on the oak dado running along the wall." In other words, they were to all intents and purposes large pictures, and the judge decided that they were to be treated accordingly. He ruled that they were "chattels," and not a part of the freehold. But the more valuable tapestries, those in the drawing-room, were differently fixed, and their fate, as we shall see, was consequently different. French tapestry of the kind is meant to be tightly stretched, and the practice in the eighteenth century—which has been followed till now—was that the panels should be fixed into the *boiserie* of the wall so that they might present a perfectly smooth surface to the eye. At Luton Hoo the room was specially prepared to receive the tapestry; the wall was first cased over with wood, then strips of wood were screwed into this casing, upon these the tapestries were stretched, being fixed by small nails, and a wooden moulding or framework was fixed round the edges. Mr. Justice Byrne has decided that the mode of fixing the tapestries constituted them an essential part of the room itself, and has ordered them to follow the freehold. The principles on which he based his judgment were those laid down by the late Lord Justice Chitty in the year 1896, in these words:—

"In considering any question of fixtures the important circumstances to be regarded are—first, the mode of annexation of the article and the extent to which it is united with the freehold; secondly, its nature and construction, as whether it has been put up for a temporary purpose or by way of permanent improvement; and, thirdly, the effect its removal will have upon the freehold."

To the non-legal mind it is hard to see that these clearly-stated positions of Lord Justice Chitty bear out the present judgment. It is not conceivable that Madame de Falbe meant the improvement to be "permanent" in the sense in which the word is employed by the Court. She meant it to last her lifetime, but there is a strong presumption that she did not mean to make the manor-house a "permanent" present of several thousands of pounds. It is hard, too, to see that the removal of the wooden framework and the replacing of the room in its previous condition would have any injurious effect upon the freehold.

These questions will doubtless be discussed on appeal; but meantime it is not surprising that the tenants of leasehold houses, which they have adorned with tapestries or pictures, are in a state of alarm. For the case is not confined to tapestries. There is a modern fashion, which is on other grounds to be deprecated (I mean because in case of fire there would certainly be a total loss), of fixing fine pictures into the panelling of the wall. If tapestry fixed that way becomes *ipso facto* part of the freehold, so must a Gainsborough or a Romney. Suppose the case of Mr. X, a tenant on the Duke of Westminster's estate. He is a modern millionaire; he has furnished his drawing-room with full-length Sir Joshuas at 10,000*l.* apiece, and his French decorator has persuaded him that they look best when let into the panelling. If Mr. Justice Byrne's decision stands, they henceforward cease to be the "chattels" of Mr. X.; they follow the freehold, and at the expiration of the lease will pass to the Duke of Westminster. This seems to be a matter requiring attention.

GLASGOW ARCHÆOLOGICAL SOCIETY.

THE monthly meeting of the Glasgow Archæological Society was held on the 20th inst., Principal Story presiding.

Mr. C. E. Whitelaw said, in view of the discussion which had taken place about the placing of monuments in Westminster Abbey, that the members of the Glasgow Archæological Society ought to pay attention to their own cathedral, where several large, costly and very conspicuous monuments had been placed in the nave. Several of them were made of a material which it was impossible for the hand of time to tone to a colour suitable to their surroundings—most of them were made of white marble. The persons to whom they had been raised were at present important, but whether they would be important to another generation was an open question. He thought it necessary for the preservation of the appearance of the cathedral that no more monuments should be erected there, especially as they were being placed to perpetuate the memory of men who were not celebrated, but were merely known at the time for having had larger purses than their fellow-citizens. Men whose memory was celebrated by a monument in the cathedral should be of great outstanding merit, men renowned in the affairs of the nation and also of the city. The Society ought to consider the matter now, before any serious harm was done. Many of the monuments were in questionable taste, and if no more were erected it would be an advantage to the cathedral. Mr. John Edwards thought the matter was one which ought to be very carefully considered before any more monuments of modern type were erected. Mr. J. D. Duncan said that when he was recently in the cathedral he was struck by the inappropriateness of many of the monuments in the nave. He thought it would be desirable to ask the Board of Works to see that great caution was used in the granting of facilities or permissions to erect monuments in the cathedral. The matter was remitted to the council, to which Mr. Whitelaw was added for the occasion.

THE ARCHITECTURAL ASSOCIATION OF IRELAND.

A MEETING of the Architectural Association of Ireland was held on the 18th inst. at the Grosvenor Hotel, Dublin. Mr. G. P. Sheridan presided.

Mr. C. J. M'Carthy, city architect, read a paper on "Some Intentional Irregularities in Italian Mediæval Architecture." In the course of his remarks he dealt with a number of articles published some few years ago in an American architectural magazine by Mr. W. H. Goodyear, a well-known American authority on architecture and archæology. These articles attracted a great deal of attention. Mr. Goodyear a considerable number of years ago, when he was spending a holiday in Italy, noticed certain peculiar irregularities which, he thought, could not be due to mere accident. A few years ago he was sent by the Brooklyn Institute of Arts to pursue investigations, and in the articles which he published he had shown by illustrations that there were in many churches in Italy deviations from straight lines. He had come to the conclusion that these deviations were found in reality to be curved lines. Mr. Goodyear had also given a series of photographs of these buildings, and some of these would be found in the Dublin Science and Art Museum. Amongst other irregularities which struck them in these churches was the diminution of space between the pillars in the nave arcade, and this diminution was always in the same direction, viz. from the west end or entrance front of the church towards the east end. Mr. Goodyear's view was that these things were done intentionally with the view of producing an increased appearance of length, and consequently an increased appearance of size in the building by methods very similar to the methods adopted by theatre scene-painters to-day.

The lecture was illustrated by limelight views.

The proceedings closed with the usual vote of thanks.

THE INTERIOR OF MILAN CATHEDRAL.

THE first particulars which strike one on passing from the front to the interior are that it is dark and gloomy, and that the leading lines are very much interrupted by the shrines introduced in the capitals of the piers, which injure also the apparent solidity of the building, and when we are told that it is nearly 500 feet long, 180 feet wide and 150 feet high we can hardly believe it. Indeed, as to the last dimension one remains incredulous, for whether we estimate the height by a general comparison with the other dimensions or by summing up the estimated heights of the parts which compose it, or from counting the steps which lead to the outside and measuring some of them, it seems to fall short of 140 feet, and it is necessary to be aware that the side aisles are 96 feet in height to be reconciled even to that supposition. To what we are to attribute this want of apparent magnitude is uncertain. The height of the side aisles certainly diminishes the appearance of that of the nave; but the width of the nave is not remarkably great in proportion to the other dimensions. At Amiens this is 45 feet 6 inches. In York, our largest cathedral it is 47; here it is about 55. With all its defects, however, it is impossible not to acknowledge the sublime effect of the interior. The style does not correspond with any of our English modes of Pointed architecture. The vaulting is simple, without any branching ribs or any ridge piece. It is so much super-vaulted that each bay appears to be in the position of a dome; and the disposition of the materials in concentric circles, or in portions of such circles, makes one believe that this is nearly the case. The windows of the clerestory are extremely small and insignificant, those of the side aisles are long and narrow. They are ornamented with quatrefoils, but a division of the height into two parts by arched ribs, which have not precisely the effect of transomes, because they do not cross the window at the same level, indicates a very different period of taste from that of the rose and quatrefoil heads in France and England. The lower part of the capitals has something of the running foliage of the fourteenth century in England, but the shrine work which forms their upper part is perfectly unique. The bases and the plans of the pillars are equally anomalous, and any person would be baffled in attempting to determine the date from the architecture, only he might safely decide that it could not be very early. The smallness of the upper windows produces a gloomy appearance and oppressive feeling, like that of the cavern style of architecture in the south of France, with which it has nothing else in common. The height of 78 feet, which is that of the lower range of aisles, seems indeed to give plenty of room for the admission of an ample quantity of light from this part alone, but such a disposition seldom produces a pleasing effect. There are three fine large windows in the polygonal end of the choir, but even these are ill placed, and have little effect.

SIR L. ALMA-TADEMA ON ART.

THE prizes obtained by the students of the Hornsey School of Art were handed to the winners at the annual soirée by Sir L. Alma-Tadema, R.A. In the course of his address he said the student should not talk too much, but work. The great difficulty for the artist was one which the literary man, because he did not experience it, could not appreciate. That difficulty arose from the fact that the artist aimed at excellence of execution. Of course there must be ideas and feelings, but the excellence of execution, the revealing of the ideas so completely that Jack and everybody else could understand them at a glance, was so perplexing, so many-sided, so difficult, and in many ways so impossible, that there was hardly a work—well, he would say that in his own case there was a picture which left his studio that he was not glad to see taken away. He had grown so sick in trying to obtain what he was looking for, he never succeeded. But from his early youth he had prayed that he might never be satisfied with his work. People who aimed no higher than they could accomplish had better stop. Art was so many-sided that none could become master of all its branches. Not all could produce imaginative pictures. Some leaned to landscape, some to the sea and its beauties and some devoted their attention to art in furniture. The latter branch was by no means without its importance, but it was essential to remember in designing furniture the use to which it was desired to put the finished article. Art and utility should be skilfully and carefully blended. In designing a chair or other article of furniture, let them bear in mind the use to which it should be put; for perfect adaptability was itself a great beauty. Modern English work in silver smithery interested him very much. It was being copied very much abroad. In some vessels there was the defect that, so sharp were the edges, a servant would cut her hands in cleaning them. He had seen a "loving cup" with an inner lip which would hamper the liquid and cause it to spill on the drinker. The eye, like the ear, must be trained. They must remember, also, that there were other points of view than their own. A physician friend of his had been quite horrified on hearing his own voice given back by a phonograph, and asked if he really talked "with a German accent like that." The explanation was that he had previously heard his own voice from within, and was surprised to find how totally different it sounded when heard from without. The successful student looked at art from as many standpoints as possible. In modelling they must apply the same teaching, and remember that the finished figure of a life model must suggest, not merely the actual pose, but the action which preceded and led to the attitude depicted. The folds or creases of the garments were of vital importance in this connection, and he gave the hint to the students because he had derived personal benefit from it. In conclusion, he wished all his hearers a happy Christmas.

ROCHESTER CASTLE.

THE repairs to the keep of Rochester Castle, arranged to be executed during the year 1900, are now completed. The work has been carried out under the supervision of Mr. George Payne, architect. Half of the interior of the building on the southern side, as far down as the floor level of the state chamber, has been restored, and certain arches which were structurally unsafe have been made good. A gallery along the same side was in a very ruinous state, especially where the great crack occurred after the rebuilding of the south-east angle in the thirteenth century. In his report to the Rochester Corporation, Mr. Payne states that a large amount of the damage everywhere present in this gallery was due, as in all accessible parts of the keep, to the wanton destruction of arches and jambs in past times for the sake of the squared stones they contained. As these supports had been removed, it was deemed necessary for the stability of the fabric to replace them with Kentish rag. One outcome of the repair of the eastern wall of the keep has been to bring several interesting architectural features to light, and these are now permanently exposed to view. The beautiful arcade dividing the state chamber has been successfully treated. Traces were discovered, whilst the central wall was being repaired, that the keep had at some period suffered from fire. The cleaning out of the well of the keep proved to be a laborious work. The total depth from the top of the central wall of the keep to the bottom of the well was found to be 136 feet, and the diameter of the well-shaft from 2 feet 9 inches to 4 feet. At low tide the water in the well has a depth of 18 inches, but at high tide it reaches 9 feet.

A Meeting of the Glasgow and West of Scotland Technical College Architectural Craftsmen's Society was held on Friday, 21st inst., Mr. Isaac Low presiding. Papers were read on the subject of "Conditions of Contract"—by Mr. Jas. A. Ferguson on "Joiner-work," Mr. Robt. Aitkenhead on "Mason-work," and Mr. Isaac Low on "Plumber-work." Deducing the contents of the three papers, the following were the most important of the items commented on. The upholding of work for the customary two years by the contractor was considered excessive, six months to one year being suggested as ample. Arbitration in case of disputes arising in the carrying out of the contract. It was suggested that in conditions wherein disputes were to be referred to the architect, whose decision would be final and binding, this might be more justly dealt with by the appointing of a representative of both the architectural and legal professions as arbiters. The questions of time clauses, extras, after-measurement system, testing of materials, &c., were also discussed. The lecturers were heartily thanked for their most interesting papers.

NOTES AND COMMENTS.

EVERYONE who has visited the Théâtre Français will remember the seated statue of *Voltaire*, by HOUDON, which stood in the foyer. It was executed in 1778, the sculptor being then in his thirty-seventh year, and the writer in his eighty-fourth year; indeed, it was the last important likeness that was taken of VOLTAIRE. The recent fire in the theatre has excited alarm about the safety of so precious a work of art, which a year ago was preserved almost by accident. It is not easy to move a life-size figure in Roman drapery and seated in a massive chair. M. GUADET, the architect of the new building, was therefore requested to devise some mechanism by which in an emergency the statue could be moved out of danger. He has accordingly arranged under the pedestal a series of wheels which will allow the mass to be impelled with as much ease as if it stood on a trolley. Revolving statues are not uncommon, but the *Voltaire* is probably the first which can be moved along the ground.

IT was to be expected that the creation of county councils in Ireland should be followed by litigation. Privileges count for much in the "Green Isle," and new bodies never fail to assert their right to them. We lately referred to a case where a county council disputed in the law courts the right of the Government to increase the salary of a surveyor's assistant on the grounds that councils were the best judges whether their officers were underpaid. Another curious case was decided in the Queen's Bench in Dublin a few days ago. In the town of Lifford, which is the capital of the county Donegal, there is a court-house, and a detached building known as the County House was used by the grand jury whenever the assizes were held. Like the court-house, it was in charge of the high sheriff. The new county council claimed it as a county building and occupied it. The high sheriff, however, asserted his control of it as part of the existing court-house, and dispossessed the council. An action was brought for trespass, which was successful. The high sheriff then appealed. There was a difference of opinion among the judges. Two of them thought the judgment should be entered for the sheriff. The county house was said to be, in a structural sense, no part of the court-house, as it was some distance apart and stood on another side of the square. But in spite of that fact, it might have been regarded at one time as part of the court-house. The third judge was of another opinion. He looked upon the building as no more than a grand jury club-house on which public money had been unlawfully expended. The majority of the court being in favour of the defendant, judgment was entered for him with costs. This is only one instance of the collisions between the old authority and the new. If the general interests of the public were taken into account, there should be no difficulty in settling the difficulties which will arise over county buildings, and it is to be regretted that public money is expended over such unnecessary litigation.

IT was at one time considered to be a grievance that so much land should be occupied by the fortifications round Paris, which are useless for purposes of defence, and prevent the extension of the city. At length the Government agreed to the demolition, and it was understood that the price which the city of Paris should have to pay for the new estate would be determined on a reasonable basis. Frenchmen are capricious, and when it was found that the site of the fortifications was about to be acquired without much difficulty the interest in the scheme was lost. The French Minister of Finance has been at last obliged to write to the Prefet of the Department of the Seine a remonstrance about the extraordinary indifference which is manifested by the Municipal Council. The Minister says that repeatedly explanations have been demanded from him in the Chamber about the great delay. He has no wish to expose the conduct of the Council, but he now declares that the time has come for plain speaking, and he will be shortly compelled to appeal to public opinion on the subject. It is evident that the Municipal Council are playing a waiting game. Probably it is concluded that the longer the delay the cheaper will be the land. The Minister says that his proposals were most advantageous for Paris. But on that subject there is sure to be more than one opinion. Meanwhile, the growth of Paris is impeded and building on a colossal scale is delayed. There is no doubt the want of employment among workmen had much to do with the creation of the Paris Exhibition, and the same cause may also have to be invcked for a settlement of the fortification question.

DURING three years the associates of the American Archæological Institute in Athens have been employed on excavations at Corinth under the superintendence of Professor RUFUS RICHARDSON. He is now able to report a very important discovery. Near the market-place of old Corinth he found the Propylæum, which, judging by the immense numbers of fragments of the architrave, must have been of imposing size. Parts of two gigantic figures were also found; they wear Phrygian caps, and are supposed to have stood on pilasters having Corinthian capitals. Two large female heads were unearthed, and also a part of the roof, on which heads of HELIOS and SELANE are sculptured. It is believed, however, that the work is Roman or Romano-Grec. A more important example of ancient art was met with at a short distance from the gateway. This was a part of a marble façade, about 30 feet long, adorned with metopes and triglyphs, and still showing the yellow, red and blue colouring of the Greeks. Further research displayed a chamber having on the west wall two bronze lion heads, which evidently was one of the fountains of Corinth. It is believed that all the parts must have belonged to some imposing structure which sheltered a spring that possessed historic interest.

THE announcement that the Italian Government has purchased the statues and paintings in the Villa Ludovisi will give satisfaction to others besides Italians. The collection could only be visited by a stranger with difficulty. The paintings are by second-rate masters. GUERCINO has a version of the *Aurora*, which is his masterpiece. There are two landscapes by DOMENICHINO and a ceiling by ZUCCARI. But far more esteemed are the ancient statues. The colossal head known as the *Ludovisi Juno* is one of the noblest of works. WINCKELMANN supposed a group bearing the name of MENELAOS as sculptor to be a representation of *Electra discovering Oresta*. Another group shows MARS seated with CUPID at his feet; there is also a colossal figure of the *Venus of Cnidos*. Among other groups may be mentioned the *Apollo and Diana*, *Pan and Syrinx*, *Paetus and Aria*. There are several statues, busts and bas-reliefs, and the wealth of the collection is in keeping with the site of the villa, which formed a part of the gardens of SALLUST, in which several examples of sculpture have been found.

THE Municipai Council of Paris were believed to have performed a gracious act when it was agreed to call a street after CHARLES GARNIER, the architect. But when it was announced that the street which was to be so distinguished was somewhere in the quartier of La Roquette, there was grievous disappointment among architects. M. ALFRED NORMAND and some other of CHARLES GARNIER'S colleagues in the Académie des Beaux-Arts at once memorialised the Municipal Council and requested that the name of the architect should be applied instead to the Rue Mogador, which is in the vicinity of the Opera House. A decision is not yet announced, but from the position of the memorialists it is assumed the Municipal Council will yield. The Rue Mogador is, however, a memorial of a French victory. In 1844 the town was bombarded and taken by a French fleet under Prince DE JOINVILLE. Possibly, as the Orleanists can claim the victory, the Council may be disposed to change the title.

ILLUSTRATIONS.

CATHEDRAL SERIES.—LICHFIELD: THE CHAPTER-HOUSE ENTRANCE.—THE CHAPTER-HOUSE PASSAGE.—VIEW IN SOUTH TRANSEPT, LOOKING TO NAVE.—GROUND PLAN.

HOUSE, WEYMOUTH PARK, WALTON-ON-THAMES.

YORK CITY AND COUNTY BANK, HARTLEPOOL:
THE DRAWING-ROOM.

NEW PREMISES, HOLBORN.

LICHFIELD CATHEDRAL: TRANSEPT WINDOWS.

At the dedication of the new window in the north transept of Lichfield Cathedral the following address was read by Mr. J. O. Scott :—

In order to make clear the reasons which have led the Chapter of Lichfield Cathedral to carry out the alterations in the window which is to-day to be dedicated, it is necessary for me to explain the steps by which the transepts have reached their present form. I need say nothing of the Norman transepts for the good reason that nothing is known of them. Whatever they were like they ceased to exist soon after the middle of the thirteenth century, when they were rebuilt in an exceedingly beautiful variety of the Early Pointed style, which had then reached its highest perfection. It is hard now, to a casual observer, to picture to himself what must have been the appearance of the transepts at this time. but by examining the indications which remain of the many missing features, and especially by comparing the corresponding parts of York Minster, a very clear idea of their original beautiful design may be obtained. The changes which have taken place are mainly in the upper part of the building, as the arches leading into the aisles as well as those carrying the central tower have never been altered. The windows at first were all lancets, with the exception of the rose-window in the south transept, and whatever corresponded to it in the north. They were very richly moulded, and had beautifully-carved capitals of an unusual type ; the coupled windows which still remain in the west wall of the south transept may be taken as a fair sample of what once prevailed throughout. They are wonderfully perfect in their proportions and in the delicate beauty of their mouldings, while the capitals are carved with the greatest boldness and originality. Similar windows once existed in the corresponding part of the north transept, considerable traces of which can now be seen on the outside face of the walls. Above these lancets was a noble range of clerestory windows, disposed for the most part in groups of three of equal height to each bay. These can also be traced outside the building. A similar range occupied the east wall of both transepts

All of these windows have left some indications inside, as their jambs in certain cases were retained. The groining was of wood, and rose to a considerably greater height than at present. The wooden groining at Lichfield is referred to in an order by Henry II., which directs his master-builder at Windsor to follow the groining of wood lately erected at Lichfield. The whole design of the transepts was based on what had been built somewhat earlier in the century at York Minster. There, there has been no material change, the early windows and the beautiful wooden groining remaining untouched, while the rich rose window in the gable of the south transept, which here has been hidden by the later groining, there forms a conspicuous feature in the design. I need not say that, while taking the transept at York as their model, the builders at Lichfield adopted a far smaller scale and simplified the design in many respects. Those of you who have ever ascended the spiral staircase in the south transept must be familiar with the finely-moulded wheel window, with its singular tracery and flanking arches, which occupies the whole of the gable and is now inside the roof. In old days it was certainly seen from below, above the series of stately lancets which then stood where the large tracery window now does.

The architectural effect of the early transepts must have been noble in the extreme, and one cannot help regretting that the builders of a later period should have obliterated so much that was beautiful. The great change which produced the present aspect of the transepts took place some time in the fifteenth century, and it seems probable that the chief object the builders had in view was, by substituting stone for the old wood groining, to make the cathedral more secure against fire, and it is very probable that it saved the cathedral from more complete destruction during the sieges in the seventeenth century. In order to vault the transepts with stone it was necessary to alter the form of all the upper range of windows. The wooden groining to which they were adapted must have been of the peculiar kind one sees at York, a large part of it being of the nature of a barrel-vault springing from a horizontal cornice above the clerestory windows. These windows were arranged, as I have already said, in groups of threes, of equal height, and as this was incompatible with the side arches or wall-ribs of stone groining, the lancets were taken down, and the windows which we now see substituted for them, one wide opening taking the place of each triplet. In doing this the jambs of the outer lancets were usually preserved, and the old archstones were reused to the new form, so that we find all through the transepts Perpendicular window arches with Early English mouldings. Great skill was shown in this work of transformation, and the groining introduced is of especially fine design ; it is very bold, the bosses being unusually large and the ribs finely moulded. The treatment of the side windows also was very successfully carried out.

At this point, however, it is necessary to stay one's admiration, for in dealing with the great groups of lancets towards the north and south, the artist's hand seems to have lost its cunning, and though the same system of reconstruction was followed which had produced such a good result in the side windows, the effect was by no means so satisfactory when the wider spaces had to be dealt with. The outer jambs were again retained and the old arch stones reused, but the height available from the top of the jambs to the point of the new vaulting was so small, while the width to be spanned was so great, that an arch of extremely low proportions resulted. The problem was somewhat better dealt with in the south transept than in the north, where the arch was of a most uncouth and irregular shape. Its redeeming feature was the beautifully-moulded Early English stones of which it was built, and probably its tracery was at first very much finer than as it came down to us, while it was without doubt filled with the noble stained glass which belonged to the fifteenth century. It has always been said that the tracery was destroyed during the sieges and renewed by Bishop Hacket, but it would seem that he did but very little to those two windows, for the bill paid by him for what is called "making them up" has lately been found, and the sum charged for them together is only 5*l*. After allowing for the difference in the value of money the sum is still so very moderate that comparatively little reparation could have been required.

I have described the architectural faults in the two large windows, and especially in the northern one, but there was also a far more serious structural defect. A flat arch is always extremely weak from being liable to sink in the middle and to spread outwards on each side. This subsidence is what had taken place to a serious extent in the north transept and to a lesser degree in the south. The ancient gable remained over the north window till near the end of the last century. It was of the full thickness of the wall below, and its great weight had crushed the flat window arch by a downward and outward pressure, doing much injury to the tracery and thrusting the side walls outward. We find that efforts were made at different times to stop this mischief by means at first of an iron tie bar alone, and in 1797 by rebuilding the gable at half its original thickness, making it rest on what is called a relieving arch, tied across by a second iron bar. The bill for this work has lately been discovered. In the south transept the tendency of the side walls to spread was checked by building the huge buttresses which so much disfigure this part of the cathedral. This was done by the celebrated James Wyatt. Thus we see that the stability of the structure was much reduced by substituting the two great windows for the lancets which preceded them, for I need hardly point out that a series of lancets divided by strong piers of masonry is infinitely more substantial than wide windows, with all the essential weakness which they involve. This, then, brings me to the actual object of my addressing you to-day.

The failure of the north transept window, though no doubt stopped for a time by the measures taken at the end of the last century, was by no means cured ; the relieving arch had in its turn given way, and the gable above was dangerously cracked, the spreading of the side walls was still going on, and the tracery of the window was ready to fall out any moment. It was therefore absolutely necessary to take some active measures for putting a stop to the mischief which had been in progress for so many years, and for making this part of the cathedral permanently sound. Every attempt which had already been made to counteract the spreading of the wide arch had failed, because the arch itself had been retained, and it became a serious question whether it would not be the wisest plan to cure the evil, once for all, by removing its cause. An architect in considering a matter of this nature has to look at it from more than one point of view. An antiquary is right in looking solely to the maintenance of the building exactly as it has come down to us, with every evidence of the changes it has passed through intact, and happily, in the great majority of instances, these are also the lines on which an architect can act ; but there are cases, such as the present, where he is at the same time bound to consider the appearance, and still more the stability, of a building, no less than its architectural history. Here, in dealing with the north transept window, there was, first, the absolute necessity of stopping the settlements in progress, then the fact that this window was an exceedingly unsightly one, both within and without, and finally the most interesting antiquarian fact, which in my opinion infinitely surpasses the historical value which the old window had, that the lovely design of the ancient lancets could be recovered with absolute certainty, and that in a great measure they could be rebuilt, stone for stone, out of their original materials. Had this window been the only one altered in the fifteenth century, and subsequently restored by Bishop Hacket, its removal would have been a very serious loss, but it is only one out of a considerable number ; about fifteen others were so altered and nearly forty were restored, the whole of which will remain as witnesses of the changes which have passed over this part of the cathedral. They are in good condition, needing nothing beyond ordinary repairs, so there is no reason why they should ever be interfered with. The exception is the great window in the opposite transept, but here, happily, the mischief is not very serious, and can, I fully hope, be dealt with by other means. The window itself is also far better looking than was the case in the north transept, and the tracery has not perished to anything like the same extent.

We claim, then, that in altering this window to the form in which you see it to-day, we have removed a dangerous weakness in the building which had been in progress ever since the tracery window was first introduced. We have removed a feature which was architecturally a serious blot on the beauty of the cathedral, and while doing this we have recovered a lost beauty as lovely as can be found anywhere, except indeed at York, where the noble Five Sisters, as they are always called, were doubtless the model on which it was originally designed. So far from obliterating the history of the building, we have surely made it far easier to decipher than it ever was before; for here in one transept is the window as the thirteenth-century builders erected it, and there, in the other, is the window altered and adapted in the fifteenth, while everywhere around remain untouched innumerable traces of the restoring hand of the great Bishop Hacket.

I have only to add that the evidences we found for the design of the lancets were of the most complete and unmistakable kind, leaving nothing to be imagined by the architect, and requiring only patient and careful investigation. This has been bestowed on the work in ample measure by the excellent cathedral mason, Mr. Bridgeman, to whom, after the lamented donor more than to any one else, the credit is due for what has been done. In addition to the numerous ancient stones which were clearly visible in the great arch before the work began, others were found embedded in the walls in great numbers. They have all been used in the reconstruction, and it is satisfactory to know that out of the hundreds of stones forming the five beautiful arches above us, only twelve new ones were required. It is the earnest hope of those responsible for the work that if some sacrifice has had to be made, as well as some departure from the usual canons of strictly conservative restoration which guide us in our work here, it will be generally acknowledged that the gain has been far greater than the loss, and that the peculiar circumstances of the case have more than justified the steps which have been taken.

GLASGOW ROYAL INFIRMARY.

THE committee of the Glasgow Infirmary have adopted Mr. Miller's plan for the new building. The following is the official description:—

The arrangement of plan, which follows very closely the lines of plan No. 5 issued by the committee to the competitors, shows a great quadrangle towards Castle Street 430 feet long by 190 feet deep. The front, or Jubilee, block faces Cathedral Square, and occupies very nearly the position of the Adams front of the present building. This block has a frontage to Cathedral Square of about 216 feet, and a prominent and striking feature in this elevation is the great central tower, 32 feet square, rising to a height of 160 feet. There is a distinctly Scottish flavour in the treatment of the tower, as, indeed, there is throughout the whole design. At the angles of the tower are circular turrets carried up through the parapet, and from the top of the square tower rises a finely proportioned spire, which, together with the turrets, forms an original and striking group, with a fine feeling of proportion.

The plan is divided into three sections or blocks, viz. the medical block, surgical block and special diseases block. The former is contained in the front or Jubilee block, and is six storeys in height, and contains 10 large wards and 20 single wards, accommodating in all 225 beds. In the centre there is a large and well lighted central hall, extending the whole height of the building, right and left of which are the wards and the various rooms connected therewith. The surgical block is placed at the north end of the site, and is six storeys high. It contains 18 large wards of 14 beds each, and 24 small wards containing in all 42 beds, the total number of beds in the surgical block being 296. This block is 290 feet long. In the centre, as in the medical block, is a great central hall, 40 feet square, with galleries all round, which give access to the corridors. This hall is lighted by a large glass cupola at the top, as well as by side windows on every floor. Grouped round the central hall are the various rooms in connection with this important part of the institution, viz. nurses' room and ward kitchen, outdoor patients' room, day-rooms, lavatories, linen-rooms, &c. The operating theatre is a large and well-proportioned apartment, 30 feet by 20 feet. It is lighted on three sides, the chief light being from the north. It is conveniently placed to the lifts and staircase, yet sufficiently retired from the traffic of the corridors. Immediately adjoining the operating theatre are the sterilising-room, splint-room and microscopic-rooms, also a recovery-room. A special lavatory is provided for the operating staff near to the operating theatre.

The central block contains the wards for special diseases. On the ground floor are the administrative offices, board-room, doctors and matrons' dining-rooms, also a large dining-room for eighty nurses at a time. On the top floor of this block are placed the kitchen and other apartments connected therewith. The kitchen being on the top floor prevents the smell of cooking getting through the building. On the top floor is a service corridor which extends throughout the entire building. Service trolleys, containing food, &c, are run from the kitchen along this corridor to the large service lifts, which are provided in the centre of each block, and then lowered to the respective floors.

In each block accommodation is provided for the resident doctor or surgeon on every floor, containing a sitting-room, bedroom and bathroom, with lavatory and w.c.

The entire building provides beds for nearly 700 patients.

It is a style which lends itself admirably to a building of this nature, where plan is the first essential, and the elevations made subservient thereto. The main elevations, while they have been treated in a simple manner, show a fine sense of massing and proportion, and the outcome of the plan is, as it should be, clearly indicated in the elevations. The great height of the buildings, and the breadth and dignity which have been imparted to them by the manner of treatment, convey a feeling which is decidedly impressive and monumental.

A special feature in the design is a flat garden roof on the top of the central block, extending nearly 500 feet in length, with a width of about 32 feet, and surrounded by a stone balustrading. This will be laid out with shrubs and seats, and formed into a pleasant airing space for patients. Passenger-lifts communicate direct with this airing space, in addition to the staircases.

At the immediate front of the great quadrangle, facing and adjoining Castle Street, are the gate-house block and isolation blocks. These buildings are only one storey in height, with stone parapets and having flat roofs, so that the view of the quadrangle from Castle Street might be interfered with as little as possible. They are treated in a characteristic style in keeping with the main buildings, and, on account of their lowness, help to give scale to the great mass behind.

A careful examination of the plans shows that great consideration has been given to obtaining the greatest possible amount of light and air to the various apartments, and especially the wards, and as far as possible keeping them free from projecting wings. In this respect the plan differs very much from the usual hospital plan, where the various wards are ranged in parallel blocks at comparatively short distances apart, thereby creating confined air spaces, and giving a gloomy aspect to the wards, as the side windows of one ward must necessarily overlook the windows of those adjoining, which tends to have a depressing effect on the patients. In the accepted plan these defects have been to a great extent overcome, all the wards having a free and open outlook.

Special plans show the method of heating and ventilating, which apparently has been very carefully studied. The system proposed is the Plenum system, whereby the entire building will be heated by means of hot air being forced into the apartments by fans in cold weather, and fresh, cooled air in hot weather. The air before being admitted to the building will be washed and purified, so that even in foggy weather nothing but pure air will be admitted, all windows being hermetically sealed. The volume of air forced into the building will be such that the air in the wards and other apartments will be completely changed every six or seven minutes, this process going on continuously.

There are six large lifts provided in the building—two in each of the three main blocks—besides which there are several smaller lifts in connection with the kitchen and dining-rooms. All lifts will be controlled by electricity.

The buildings will be entirely lighted by electricity, with special movable fittings at the bed of each patient, and a complete telephone system will be installed throughout the whole of the buildings.

The two perspective drawings which accompany Mr. Miller's design show at once the imposing nature of the structure. The style of architecture, as already indicated, is based on examples of Scottish Baronial work, as practised in the sixteenth and seventeenth centuries.

When completed it will be one of the greatest buildings of its kind ever erected, and will certainly be one of the sights of the city.

We understand, says the *Glasgow Herald*, that ten architects in Scotland and England were requested to send in competing plans for the reconstruction of the Royal Infirmary—five of these belonging to Glasgow, two to Edinburgh and three to London—a fee of 100 guineas being paid to each architect. Now that the plan submitted by Mr. Miller has been adopted, it is suggested that his design, along with all the other designs, should be exhibited in public. This seems a proper course to take in the interests not only of architects generally, but of those who may be anxious to study the latest proposals for the treatment of hospital buildings.

THE SHEPPY TOMB IN ROCHESTER CATHEDRAL.

In 1825, during the repairs which took place in Rochester Cathedral under the superintendence of Mr. Cottingham, the architect, the tomb, with effigy of John de Sheppy, &c., was found walled up in the easternmost arch of the north side of the choir, and covered with more than two cartloads of chalk. The figure was lying on an altar-tomb, over which is a double curved Gothic arch. Intermixed with the superincumbent rubbish were found various beautiful but sadly mutilated portions of the decorations connected with John de Sheppy's tomb, as figures of the Blessed Virgin and the Infant, Moses, portions of other small statues, branches of the vine, clusters of grapes, crockets, pinnacles, &c., all elegantly carved, painted and gilt.

The effigy of the bishop is cut out of a single stone, as he appeared when attired in the pontifical ornaments. He wears a costly mitre, a cope painted to represent rich embroidery, dalmatic or alb, and tunic. Against his left shoulder rests a pastoral staff, swathed with a white bandage; the head of the staff is broken off. On his hands are jewelled gloves, and on the fourth finger of the right hand is a ring, in which a ruby is represented to be set; at his feet are two dogs, having collars encircled with small bells. These animals, so often represented on tombs, were (like hawks) the accompaniments of rank. He wears boots, on which are painted the bands of the ancient sandals which they had superseded—the "caligæ cum sandaliis" of the Romish pontificals. Over the left arm is a rich maniple, decorated with lozenge-shaped compartments, ornamentally painted, and covered with pieces of crystal or white transparent glass.

We learn from the ancient formularies that the regalia of the episcopal office (if they may be so termed) were imposed with considerable solemnity. The bishop elect, before his consecration, retired to a side chapel, where he put on the amictus or amice; the alb which, notwithstanding the name, was not always necessarily white, nor was it invariably made of linen cloth—the alb was confined to the body by the cingulum or girdle. The stole, a narrow slip of cloth, was thrown over the head and hung down above the alb on either side to the knees. The maniple or fanon, a napkin for removing any impurity from the sacramental cup, was placed on the arm, and over the whole was worn the chasuble or cope. Sometimes, like the surcoat of the military order, copes were adorned with the armorial bearings of the bishop to whom they belonged; thus, in the thirteenth century we find Dean Geoffrey de Lucy's red velvet cope embroidered with luces or pikes, his family cognisance, and with a representation of the Root of Jesse.

John de Sheppy was originally a monk in the priory of St. Andrew's, Rochester; he was educated and patronised by his predecessor in that see, Haymo de Hethe, confessor to Edward II. In 1352 he was himself elected to the see of Rochester, and consecrated bishop on March 10 in that year, by William Edendon, Bishop of Winchester, in the church of St. Mary Overy (now St. Saviour's), Southwark, no doubt with the ceremonies which have been recited.

He must have been a man of considerable ability and general attainments, for he was appointed Chancellor of the Realm A.D. 1356, the 30th of Edward III., and Treasurer in 1358. Some sermons of his composition are said to be still extant at New College, Oxford. He died October 19, 1360, at his house in Lambeth, called la Place, leaving 100 marks (a large sum for the time) to defray his funeral expenses, and was buried at Rochester in a chantry of his own foundation, where he had erected an altar to St John the Baptist, and where he directed a mass to be daily sung for the soul of his royal master the third Edward, for his own, and for the souls of all the faithful defunct.

He endowed this chapel with certain lands and tenements for the support of a chantry priest, and appointed as trustees of the endowment the Chancellor of England, the Chief Justice of the King's Bench, and the Master of the Rolls (Clericus Rotulorum) for the time being, in perpetuo. From the revenues of the endowment the chaplain was to present the Chancellor yearly with three quarters of oats, the Chief Justice and the Master of the Rolls with two quarters each for their trouble. These oats might be considered as a dole for their lordships' horses, when they might themselves journey to Rochester to inspect the chantry estates and audit its accounts.

From a deed, extant in the Textus Roffensis, of John Cardon, prior of Rochester in the time of Henry VI., we find the receipts of the priest from the chantry estates commuted for an annual stipend of fourteen marks. The poet Chaucer has censured in his day those ecclesiastical pluralists who sought to insure an augmentation of their worldly revenue by obtaining, in addition to their livings, one or two of these chantry endowments. He says of his parish priest that

> —— he sette not his benefice to hire,
> And left his sheep incumbered in the mire,
> And ran not unto London, to Seint Poules,
> To seeken him a chantry for soules.

That is, he did not abandon the spiritual instruction of his flock to become a stipendiary drone for the performance of a duty, nominal perhaps in many cases, or at best (as the poet, whose mind was remarkably unshackled by the superstitions of his age, conceived) absurd and useless.

John de Sheppy was buried either under the identical arch where his effigy now lies, or in some similar position between the chantry which he had founded and the body of the cathedral church. The remarkable variation in the inscription on either side of the slab on which his effigy rests proves this circumstance. When in the chantry chapel the spectator reads, "hic jacet dñs johañs de schepeie epũs istius ecclĩẽ," bishop of that church. When in the choir of the cathedral, as before, with the alteration "episcopus hujus ecclesie," bishop of this church.

Weever no doubt alludes to this identical effigy when he says Bishop John de Sheppy's portraiture is in the wall over his place of burial: precisely in such a situation was it found. The preposition in, which has been erroneously transcribed by the compiler of the history of Rochester on, shows that Weever in his description of the tomb means an effigy not a picture, and that this costly memorial was visible about 1631, when he published his "Funeral Monuments"

No doubt the mutilations which it has undergone were perpetrated by the soldiers of the Parliament army, whose buff coats and bandoleers, remaining in the cathedral at this day, attest their having desecrated it as a military barrack. Indeed, we find the warden and scholars of Merton College, Oxford, recording precisely the same cause for the mutilation of the monument of their founder, which is placed but a few yards north-west of John de Sheppy's, and which they renewed in the year 1662.

We may conjecture that the effigy of de Sheppy was concealed during the troublesome times (with a view to the re-edification of his tomb at some future period) by the care of the pious John Warner, who was Bishop of Rochester from 1637 to 1666, a period which embraces the democratic and fanatical fury of the great Rebellion, so destructive of the memorials of the piety and taste of our ancestors.

PARTIAL OBSTRUCTION OF LIGHT.

On Friday last Mr. Justice Joyce delivered judgment in the case Home and Colonial Stores *v.* Colls. The plaintiffs sought an injunction to restrain Mr. Colls, the builder, from erecting at No. 44 Worship Street any building which would interfere with the ancient lights of the plaintiffs as they were formerly enjoyed. The case was tried early in the month. It was contended on the part of plaintiff that the measure of light to which a person was entitled was what he hitherto enjoyed. The defendant maintained that sufficient light for habitancy or business was the extent of the easement.

The following was his lordship's judgment:—The plaintiffs are entitled for the residue of a term, having about seventeen years unexpired, to a considerable block of buildings situated on the east side of Paul Street, at the corner between that street and Worship Street, which runs westwards from Paul Street, so that the plaintiffs' building has a west front to Paul Street and a south front of about 150 feet in length to Worship Street. Worship Street is a tolerably broad thoroughfare, being 41 feet or thereabouts across. Opposite a portion of the south front of the plaintiffs' premises in Worship Street is the site of some buildings recently removed, which is about 36 feet in width and numbered 44 in the street. The buildings which formerly stood on this site were 19 feet 6 inches in height, and the defendant has entered into a building agreement to erect on this site a building which, if and when completed, would be 42 feet in height. On the west of the defendant's premises, and at the corner between the south side of Worship Street and the east side of Wilson Street, there is a public-house 33 feet in height, and none of the buildings in Worship Street on the east of the defendant's premises exceeds that height. It is, I think, tolerably clear, and I find as a fact, that the defendant's building if erected to the height of 42 feet as proposed would not materially interfere with the access of light to any window on the first floor of the plaintiffs' premises, or with any light to which the plaintiffs are entitled in respect of their basement. The real and only question, in my opinion, is with respect to apprehended injury to the third and fourth windows—counting from Paul Street—on the ground floor of the plaintiffs' building. These windows are of large size, but although the top light is said to be the most valuable and important, the uppermost part of each of the windows is filled with coloured glass to a depth of 20 inches from the top, and there are wire blinds fixed at the bottom of each window. The portion of the ground of the plaintiffs' building which is opposite the defendant's premises is used as an office. It consists of a large room 11 feet 10 inches high and of unusual depth, the back wall being upwards of 50 feet from the Worship Street front, and it has no window nor source of natural light at the back. This room contains several desks used by clerks in the employment of the plaintiffs for the purpose of their business. It is fitted with electric light, there being five rows of lamps in or near to the ceiling and arranged parallel to Worship Street. It is, I think, the result of the evidence that it has ordinarily, if not always, been the custom to use the electric light in the back part of the room, and it would require a most extraordinary amount of light from the windows in Worship Street to enable such use of the electric light to be dispensed with even on ordinary days. Practically, I think it may be assumed that the electric or some other artificial light is now, and must always be, necessary in order to illuminate the back part of the room even in the daytime. There is no evidence to show that any such extraordinary amount of light from the Worship Street windows had been enjoyed or required for anything like the period of twenty years. Probably the ground-floor rooms in the plaintiffs' premises were reconstructed or rearranged as they now are within quite a recent period. Various expert witnesses were examined, and as the result of their evidence I am of opinion that the proposed new building of the defendant would not affect the selling or letting value of the plaintiffs' premises. If erected to the proposed height of 42 feet no part of the defendant's building would be high enough to reach any line drawn at an angle of 45 degs. to the horizon from any point in the base or sill of either of the windows in question belonging to the plaintiffs. But the defendant's building would, for its width of 36 feet directly south of these windows, cut off a portion of the sky area now visible from within the plaintiffs' office, and it would, I think, to some extent necessitate more frequently and during somewhat longer hours than at present the use of artificial light in the front part of the office. It is practically admitted that the defendant's building might be raised a certain height—the plaintiffs' principal witness said to a total height of 25 feet from the ground—without any material injury to the plaintiffs. Apart from any question with respect to the back part of the plaintiffs' premises, and to the extraordinary amount of light required (if it could possibly be obtained) therefor in the absence of illumination by artificial light, the plaintiffs' premises would still, in my opinion, after the erection of the defendant's building, be well and sufficiently lighted for all ordinary purposes of occupancy as a place of business. If they were of only ordinary depth they would have amply sufficient light. At present they have abundance of light, and in fact are, in my opinion, unusually well lighted. If, as was contended on their behalf, the plaintiffs are entitled to the full amount of light now enjoyed without appreciable diminution, they would have a good cause of action upon the erection of the defendant's building, though it may perhaps be doubted whether the diminution of light that would result would be sufficiently serious to entitle the plaintiffs to an injunction. In my opinion it is not possible to reconcile the numerous authorities that were cited before me in the arguments of counsel. But the defendant insists upon the most recent decision, viz. that of Mr. Justice Wright in the case of Warren *v.* Browne, and, after considerable hesitation, I have come to the conclusion that that decision, if it is not reversed by the Court of Appeal, ought to govern the present case, and I think that, sitting as a judge of first instance, I am bound to follow it. Assuming therefore that I am right in this view, I am of opinion that this action fails and must be dismissed with costs.

THE TUNNEL UNDER HAMPSTEAD HEATH.

HAMPSTEAD is much perturbed, says a correspondent of the *Times*, by the vision of an electric railway burrowing mole-like under the heath, and throwing up stations here and there to mark its track. The heath has been hitherto considered sacred ground. Some time in the sixties an adventurous railway company proposed to tunnel under the heath, but in face of the strong opposition of the residents, and the then newly formed Commons Preservation Society, the scheme was abandoned. Since then no promoters have dared to touch the heath; the North London Railway unloads its freight at the foot of the hill, but does not encroach on an inch of London's playground. The Charing Cross, Euston and Hampstead Railway is not so scrupulous. Should its proposals be established, a footing on the heath will be gained, and the conditions under which London enjoys the nearest piece of wild nature within its reach will be radically changed.

By a series of Acts, commencing in 1893, the Charing Cross and Hampstead Company have obtained powers to make a deep underground railway from King William Street, Strand, to the top of Holly Hill, Hampstead. The line is to run under the Charing Cross and Tottenham Court Roads, thence by way of Euston to Chalk Farm, and so along Haverstock Hill, Rosslyn Hill, High Street and Holly Hill to a point in the old village of Hampstead a hundred yards or so from the flagstaff and the pond on the summit of the heath. This railway has not been made—scarcely, it is believed, begun—and the period for its completion has been extended from time to time. Now, under the impulse given by the success of the Central London Railway, it is proposed not only to carry out the original project, but to greatly extend it; and the scheme, it is said, is to be financed by an American millionaire, who owes his dollars to tramways. By two Bills now deposited power is sought to prolong the line at each end—in one direction from Charing Cross to Victoria, and in the other from Holly Hill to Golder's Green at Hendon—and also to construct a branch from Kentish Town to the Archway Road. It is the prolongation to Golder's Green which affects the heath. The railway is to be taken directly under Whitestone Pond and the very summit of the heath—celebrated for the wide view it gives away from London over meadows and hedge-rows to Hendon and Harrow and yet more distant highlands. Then, passing near the famous Jack Straw's Castle, it runs in a line, not under, but roughly parallel with, the high road to North End, and thence by the Hendon Road to the junction of that road with the Finchley Road, where a large piece of land is to be acquired for a generating station. Thus the line will cut the heath in two, leaving the West Heath on the left, and the Spaniards Road on the right. A railway company is not bound to indicate in its Bill or on its plans where it intends to place its stations; but stations on the heath there will, of course, be. One likely spot is on one of the properties of the Hoare family, Heathlands; another is at North End. There will be no station or shaft actually on the open land of the heath.

To what extent, then, if at all, will the railway damage the heath? For the line already authorised, as distinguished from that now projected, nothing but good can be said. Hampstead is at present singularly cut off from the west end of London. There is no direct communication by railway, and it is a long journey by any form of road conveyance. A clean tube by which one may be carried in some five-and-twenty minutes into the heart of old Hampstead will be a boon to London and a still more precious boon to Hampstead. Access to the heath will be given at a new point; within a few minutes' walk of the station the finest views the heath affords may be enjoyed, while nothing will be done to impair the charm of the heath itself. The projected line is in a very different position. Were the tunnel the only thing to be considered, London should hesitate before sanctioning the scheme. The hill on which the heath lies is composed of a mixture of clay and sand. A great tube laid under the heath will, of course, act as a drain, and it is quite likely that the grass and gorse and trees on the heath will suffer from the loss of moisture; this was the view which prevailed thirty years ago. Moreover, it seems to be established beyond question that the trains passing along these deep-laid tubes shake the earth to its surface, and the constant jar and quiver will probably have a serious effect upon the trees in the neighbourhood by loosening their roots. Under the summit of the heath the line will be far down, but it is to come to the surface at Golder's Green, and as the hill drops steeply towards North End the depth will be reduced to something like 40 feet before the line leaves the heath. It passes directly under a beautiful avenue of elms near the house where Lord Chatham spent his later years—the only feature of the kind on the heath—and one must probably be prepared for the loss of these trees and much injury to the garden of Wildwoods. But of course the tunnel is not the only thing to be considered. No railway company could abstain from opening a station on the surface of the heath. Even if it were bound not to do so by a clause in the present Bill, there would be constant applications in future sessions to obtain a release from so unnatural a condition. There will, of course, sooner or later be stations. Heathlands, which is said to have been selected as the principal station on the heath, is an old-fashioned house, dating from Hampstead's best days, standing in walled grounds, its tall trees giving repose and dignity to the heath adjoining. That it is still a spot to be coveted may be inferred from the fact that it was lately occupied by Lord Glenesk, and has now been purchased by Lord Iveagh, it is understood, for purposes of occasional residence. Replace such a country house by a railway station and the whole character of the place is changed. The Queen Anne houses and old-world haunts of Hampstead still play a large part in producing the impression of quiet and contrast with the adjacent town, and none of them can be spared. But this is not all. Picture the constant daily traffic over the green sward to and from the station and the enormous crowds which will be discharged right on to the centre of the heath on Sundays and holidays. The best comment on the effect of such crowds is furnished by the surroundings of the present Hampstead Heath station. For a quarter of a mile from the station the London County Council has fenced off every foot of green sward. If the heath were not thus enclosed there would soon be no particle of grass to look upon. Imagine the effect of railing the charming rough land on either side of the Spaniards Road, or the hill to North End and at the corner of the West Heath, at present the most retired fragment of the whole common. Every one wishes to give London the greatest facilities for the enjoyment of the heath. But the peculiarity of the heath, its charm to the man of the streets, is that it is a heath—open, wild, scrubby, furze-grown. If the means of access are so arranged that these characteristics, difficult enough to preserve in any case, can no longer be maintained, the heath, as London knows and loves it, will be gone.

And there is no necessity to run these risks. In the first place, why should not the line stop for the present at its authorised terminus on the London side of the heath? It has not yet been opened even to that point, and there has been no opportunity of observing the use of the heath from this new point of access and its effects. And in the second place, if there is a case for reaching Golder's Green, that point can be reached as quickly and conveniently by skirting the heath on its west side and falling into the line of the Finchley Road. By this means the heath may be wholly avoided, while a station may be opened a short distance down one of the roads, giving access to the West Heath. There would thus be three stations; no one of them are actually on the heath, but each within a few yards—one of the Lower Heath, a second of the Flagstaff and the summit, and the third of the West Heath. There seems every reason for the adoption of such a line in preference to that now before the public.

GLASS PAINTING.

We have lately published some articles on stained-glass windows which were executed some years since in England. It may suggest the spirit in which many of them were executed if we give some remarks by the late Mr. Street, who deserves to be considered as one of the law-givers of the middle period of the nineteenth century.

The history of design in glass is curious; its principle varied considerably in the three great periods of Christian art, and a very short statement of its successive varieties will be useful for my purpose.

In First-Pointed it was mosaic in its idea, and rather non-transparent than transparent; still the drawing and treatment of the material were generally very true to its requirements.

In Middle-Pointed the idea was also really semi-mosaic, the glass transparent, whilst the superiority of the draughtsmanship and the conventional imitation of and use of natural forms gave it a great advantage over its predecessor.

In Third-Pointed, in its full development, the design was what we should call artistic, attempting to represent nature as perfectly as on canvas, and consequently the attempt at deep shadows made the glass necessarily often non-transparent, and designs in perspective were continually and unsuccessfully made.

Of these three I believe the Middle-Pointed to have been the most true in its development in all ways. For there are certain necessities in the construction of glass paintings which it may be well to recapitulate before proceeding further, and it more than either of the others fulfilled these necessities.

1. Each piece of glass must be lined round with a black line of lead, unnatural and stiff in its effect.

2. The pieces so tied together must be each of one colour, two colours not being admissible on one piece.

3. The object of a window being to let in light, that glass is the worst which again artificially shuts out light. It must therefore if good be very transparent.

4 The effect of a window must be so decided as to be intelligible from a great distance.

5. The absence of shading and of perspective are certainly necessities—the first because it darkens and makes dismal what should be clear and brilliant, and the second because it can never be so managed as to look correct, or to harmonise with the straight lines of the architecture or the stiff lines of saddle-bars, &c., which confine it on every side; and lastly, it is absolutely necessary that the design of the glass should never interfere with or oppose the design of the stonework, but that it should be treated in all cases as subordinate to it.

Now all these things are of necessity in stained glass, and therefore none can be good without them.

First-Pointed regarded most of them, but as it was purely and entirely conventional in all respects it was inferior to

Middle-Pointed, which in its perfection obeyed all, and taking nature as a guide, but conventionalising her forms, really, as I hope to prove, worked on the most truthful and best of all rules.

Whereas Third-Pointed, pretending to take nature as a guide, and doing so without conventionalising her, and not regarding or obeying those rules of which the necessities of the material require the strict observance, and further attempting to disregard and override all architectural arrangements and restrictions, failed most egregiously.

And having thus stated which of our old styles is in my opinion the most perfect, I proceed to examine more at length the theory of conventional forms which I consider of very great importance in estimating the real necessities and capabilities of art in glass.

I believe, then, that unless you can have absolutely perfect representations of natural forms, it is far better to have those forms in a conventional guise. And as perfect representations can only be expected from great artists working on a proper medium, it seems absurd to expect them from very inferior hands (as they must always be) working on a medium which, let the representation be never so exact, would yet never allow it to look really like nature. A wreath of real flowers is worth 500 artificial imitations; but I doubt much whether such a wreath gives more pleasing feelings, or produces a more perfect effect than does some rich and brilliant diaper of flattened and conventional flowers spreading in endless profusion through window after window of some long aisle. And further, let me observe, that conventional representations of natural forms are usually the absolute forms which nature has produced, taken from the most perfect examples—the best maple leaves or the best lily that can be found. Not twisted about in the wild luxuriance of active life, but still represented in their individual shape and with their fibres and their petals just as they really are. These forms, so obtained, are genuine ornamental forms; they do not require an artist to paint each leaf, but a patient humble workman may do them even more effectively than the most brilliant of painters. And thus these forms are best suited to a manufacture which does not allow of the general employment of great artists. A single practical instance is of more force than a host of theories, and so let me ask anyone here who has looked much at modern glass, whether he has ever seen any of that most detestable of all hateful things—shaded foliage in glass? If anyone here has noticed it, then he must have noticed the dismal, the heavy and the unreal effect which always distinguishes it. The slightest amount of knowledge or discernment will suffice for the perception at once of the difference between it and foliage painted in the ancient and proper way, stiff and precise in its form and transparent in its texture, not attempting unsuccessfully to imitate nature, but happily and successfully reminding us of her, as it were, by a beautiful symbol.

In further development of the value of conventionalism, let me ask whether, *e.g.* any representation in oak or brass of a real eagle for a book desk ever approached in real grandeur and fitness those quaint and magnificent birds with outstretched wings, stiff feathers and upturned heads which we call eagles, which symbolise those birds, but which are really best when least like them. Or again, is not the stiff conventional Mediæval angel infinitely more solemn and more beautiful than the wretched attempts at natural representations of heavenly beings which for 300 years have been the fashion?

But I have no time to go into the whole question, and am only able therefore to state in a very general way the exceeding importance of this principle, and its value in all the decorative accessories of good architecture, and I have been particular in stating my opinion, because I perceive that in most modern glass, whilst its importance is recognised in the treatment of representations of foliage and the like, yet in the treatment of figures and subjects it is quite forgotten or ignored.

In these the existence of a new principle is, I suppose, perceived, but with what reason I am unable to see. The same arguments which make me feel certain that shaded foliage is not effective, prove equally strongly that shaded figures are objectionable. And I am convinced that a careful examination of old glass would at once prove that in old examples, where all other elements of truthfulness in construction and design are found, this last, the most important of all, will not be found wanting. I should therefore lay down as one of the most important canons that no shading can be good in glass which is not transparent and that that glass is best which trusts most to outlines and lines, and least to shading. I have had many opportunities of examining new shaded and old unshaded glass side by side, and I have invariably felt that this was the one point in which more than any other the new failed. It is, moreover, as it seems to me, the one great point at which the line must be drawn in allowing artists, or men who pretend to be artists, to work. For it involves many other points. For if a figure or group of figures are transparent and without shading, it follows that they are so far not natural and not exact representations of nature; and this point once allowed, there is a certain degree of conventional licence in attitude, in disposition of drapery and in arrangement of colour which may well also be allowed, and which, being obviously without any pretence to represent nature exactly, ceases to offend in the degree that those representations of nature do, which it is utterly impossible, owing to their material, to make exact in their imitation.

And if this licence is not only allowable, but absolutely necessary in stained glass, then we at once get over one of the greatest difficulties in the treatment of the material, the existence, namely, of the black lines of the lead, and the stiffness, formality and unnatural effect which they involve. For there is no doubt that the lines should be boldly shown wherever necessary for the construction, and consequently it is satisfactory to think that they need in no way interfere with the true principles of design.

The absence of shading which I have mentioned as one of the points most to be remembered in designing for glass involves not only the loss of ordinary pictorial effect or chiaroscuro, but also the absence of perspective; and this on grounds additional to those which I have already noted of the incompatibility of perspective with the straight lines of the constructional parts of the window. A coloured subject in perspective must have not only linear but just as much aërial perspective. It will never do that the tints of the distant parts should be as forcible as those of the foreground, or that figures in the distance should have robes as bright and sparkling as those of the figures which are close at hand. This seems to be so obvious that it ought at once to expose the absurdity of all attempts to copy in glass cartoons intended for oil or fresco. So, for instance, in the Munich glass at Cologne, or in the church of S. Maria Hilf at Munich, I think every one's feeling must be—much as he may admire the magnificence of the offering or the boldness of the attempt—that it would have been much more delightful to see such subjects represented on the walls than essayed in windows, where they disobey all the necessities of construction, are deficient in their effect, and disagree *in toto* with all the architecture, the beauty of which they ought to have heightened and brought out.

So then I think I have shown that high art, in the ordinary sense, cannot co-exist with the proper use of the materials at our disposal; that is to say, that the kind of art which is successful on canvas will probably be just the reverse in glass, and that elaborate representations of actual life and of nature are quite wrong in principle and must always be unsatisfactory in their effect.

There is one other consideration which bears very forcibly on this question, and this is the fact that glass is properly a vehicle for architectural decoration, and not primarily for the introduction of religious pictures into churches. There can, I hope, be no doubt among us that if we wish satisfactorily to develop a school of Christian artists by giving them work in our churches, it must be done rather by giving them our walls than our windows to work upon; we must ask them to work in fresco or to paint in oil, and take care only that the windows and their glazing let in so much light as may enable us to see all the beauties which their brushes have figured on the walls.

Stained glass ought to be simply an architectural decoration schemed out by the architect, forming part of his entire plan, harmonising with the architecture and capable of being executed to a great extent by workmen whose powers are little above being merely mechanical. Very much of the old glass I believe to have been executed on this principle, as, for instance, that system which prevailed so extensively in the fourteenth century of arranging the subjects or figures with a band of rich colour about the middle of a long succession of windows, so as to produce a decided horizontal line of rich colour throughout the building, harmonising with and assisting the lines of the architecture, as may be seen at Merton College Chapel, or in the nave of York, or in the choir of Cologne, in which last instance no doubt it contributes much to give strength of effect to the clerestory windows which would have otherwise looked weak and wiry and attenuated.

Again, the filling in of such windows as those five sisters, as they are called, in the transept of York—to give one example out of hundreds of the same nature—is an instance of the attempt to make the glass simply an architectural ornament; and need I say how successfully this was achieved? May I not appeal to the universal admiration which such glass excites for a confirmation of my views?

I have not space now to say more on this most important point, but I am well assured that it is of immense importance, and that so long as we are content to treat glass painting as if it were independent of architecture, so long we may expect to meet with disheartening results.

I should like now to say a few words on the extent to which paintings in oil or fresco may be taken as models by glass painters, because it is very much the fashion to require them to do this, and unfortunately the fashion generally requires the reproduction of the works of an unsatisfactory school, that of the modern Germans.

What I have already said may have been sufficient to show how completely it is a mistake to make a modern lithograph the foundation of a stained window, and yet this is done and admired. All I wish to say now is that if it is done at all, the works of those painters ought to be selected as the best models which show the least attempt at chiaroscuro, and the greatest simplicity and decision in the attitudes and details of dresses and figures. Such pictures as those of Memling, Van Meckenen, Roger of Bruges, Van Eyck, William of Cologne, and the like, contain, no doubt, a mine of information which might, with discretion, be turned to much account. But to attempt to turn the paintings of men like Hess or Overbeck or Steinle into glass is another and a very different thing, and can never be successful; for their works are always deficient in that sternness and decision of purpose which marked the early German school, and which ought to mark any school of painters on glass.

But even more information and more useful knowledge is to be obtained from the illuminated manuscripts of the Middle Ages than from early paintings. Not only as to the proper mode of treating the various subjects required in the ancient traditional manner (and this is very important), but also as to arrangements of colours and the like; for as a large number of the subjects are represented on a gold ground without attempt at either perspective or shading, they come very near to the requirements of glass.

There is again in modern glass one most glaring fault which is visible in the works of almost every one, that, viz. of continuing one subject through a number of lights of a window. There can be no excuse for this violation of an absolute law; and if it is right to have such large subjects, then it is high time that architects should be requested to omit the monials from their windows. At any rate, monials and such subjects cannot properly co-exist. But this fault is brought to the very acme of absurdity when a succession of niches and canopies, five or seven in one window, contain only one subject, and is even worse when, as is often the case, each of these canopies and each pedestal has its own very peculiar point of sight and equally peculiar vanishing points, none agreeing with each other, or with the subject which is pleasantly supposed to be visible through openings in their backs.

It is distressing to have to notice such faults, but it is quite necessary, for they are not only done but persisted in and argued for, because there is ancient precedent for such mistakes. It is high time that in glass, as in other things, men should begin to think a little for themselves; if no further, at any rate so far as to discover which is the good ancient precedent. All that is old is not good; it is all venerable, all to be preserved where it exists, but not all to be copied because it exists. And yet one hears men argue as if our forefathers never in a single instance made a mistake.

I for one, with a much deeper admiration than most men for what I believe to be their good works, do not hesitate to confess that many of their works I do not consider good, and should be very sorry to be bound to imitate.

TESSERÆ.

Pompeii.

In the year of the Christian era 63 an earthquake showed the city on what tenure her lease was held. Whole streets were thrown down, and the evidences of hasty repair are still to be detected. From this period occasional warnings were given in slight shocks, until, in the year 79, Vesuvius poured out all his old accumulation of terrors at once, and on the clearing away of the cloud of fire and ashes which covered Campania for four days, Pompeii, with all its multitude, was gone. The Romans seem to have been fond of villas, and the whole southern coast was covered with the summer palaces of those lords of the world. Vesuvius is now a formidable foundation for a house whose inhabitants may not wish to be sucked into a furnace 10,000 fathoms deep, or roasted *sub aere aperto*, but it was then asleep, and had never flung up spark or stone from time immemorial. To those who look upon it now in its terrors, grim, blasted and lifting up its sooty forehead among the piles of perpetual smoke that are to be enlightened only by its bursts of fire, the very throne of Pluto and Vulcan together, no force of fancy may picture what it was when the Roman built his palaces and pavilions on its side. A pyramid of 3,000 feet high, painted over with garden, forest, vineyard and orchard, ripening under the southern sun, zoned with colonnades and turrets and golden roofs and marble porticoes, with the eternal azure of the Campanian sky for its canopy and the Mediterranean at its feet, glittering in the colours of sunrise, noon and evening, like an infinite Turkey carpet let down from the steps of a throne—all this was turned into cinders, lava and hot-water on (if we can trust to chronology) the first day of November, A.D. 79, in the first year of the Emperor Titus. The whole story is told in the younger

Pliny's letters; or, if the illustration of one who thought himself born for a describer, Dio Cassius, be sought, it will be found that this eruption was worthy of the work it had to do, and was a handsome recompense for the long slumber of the volcano. The Continent, throughout its whole southern range, probably felt this vigorous awakening. Rome was covered with the ashes, of which Northern Africa, Egypt and Asia Minor had their share; the sun was turned into blood and darkness, and the people thought that the destruction of the world was come. At the close of the eruption Vesuvius stood forth the naked giant that he is at this hour—the palaces and the gardens were all dust and air—the sky was stained with that cloud which still sits like a crown of wrath upon his brow—the plain at his foot, where Herculaneum and Pompeii spread their circuses and temples, like children's toys, was covered over with sand, charcoal and smoke, and the whole was left for a mighty moral against the danger of trusting to the sleep of a volcano.

Royal Patronage of Art in England.

Henry VIII. honoured and encouraged painting. He first formed the nucleus of the royal collection, which was augmented by succeeding monarchs, but which contained at his death no less than 150 pictures. He patronised Holbein, employed him and admired him, and told a petulant courtier, who complained of the painter, that "of seven peasants he could make seven lords, but he could not make one Hans." There is no evidence, as Walpole tells us, that Elizabeth had much love of painting, and there is evidence that she did not understand it, for she once ordered her portrait to be painted "with the light coming neither from the right nor from the left, without shadows, in an open garden light." But it was not absolutely necessary for the encouragement of painting that the sovereign should be a judge of art. Elizabeth loved to be painted, and to tax the skill of the artist in ingenious flattery. This was sufficient, if not to circulate a correct taste, at least to set a fashion favourable to artists, and to disseminate a love of portrait-painting among the more opulent portion of her subjects. In the reign of Charles I. there was positive encouragement given to art, and of a kind which ought to have elicited pictorial talent if the germs of it had anywhere existed. Charles understood and valued painting. He collected munificently and judiciously, thereby raising the standard of the public taste, and making his people familiar with the contemplation of excellence. The cartoons of Raphael and the splendid gallery of the Duke of Mantua were brought to England during his reign, and the royal collection at Whitehall was augmented to 460 pictures, among which were nine by Raphael, eleven by Correggio, sixteen by Giulio Romano and twenty-eight by Titian. Not only by the display of beautiful pictures, but also by the presence of distinguished artists might the national taste have been stimulated, for England was within a short period visited by Rubens and Vandyke. During sixteen years of the reign of Charles the arts of peace might be securely cultivated, but no great artist was called into notice by all the encouragement and example with which that period had been more than usually replete. No native talent appears to have been elicited, which, struggling through the storms of civil war, and suppressed for awhile by the discouraging frown of sectarian austerity, was ready to revive under the countenance of Cromwell (of Cromwell, who sat to Lely, and was chiefly solicitous that he might not be flattered, but that all the warts on his face should be accurately painted), and would have burst forth with elastic vigour in the joyous reign of Charles II., when all that the austerity of the puritan had discountenanced was lauded and followed with prodigal excess. But no such Englishman appeared. Only one distinguished artist was alike favoured by the Protector and the king, and he was a foreigner, Sir Peter Lely. And who succeeded—some say supplanted—him? Another foreigner, Sir Godfrey Kneller. To four distinguished foreign artists—Holbein, Vandyke, Lely and Kneller—we have thus been almost entirely indebted for portraits of the most eminent persons who had appeared in England during a century and a half. Scarcely any Englishman was found to follow, even at a humble distance, in the pursuit of so popular an art.

Wall Decoration.

One of the first requisites in designing a subject for decorating a wall is to make it fit the space, as if the shape had been made for the design, and this is clearly dependent upon the skill of the painter; at the same time, to the painter who knows the resources of his own art, every new shape will suggest a new modification of the composition of even a hackneyed or commonplace subject. For as the fine arts consist in the application of forms and colours, so as to make a given appeal to the mind, the arrangement of lines and masses in a composition may be varied to suit the requisition of decorative art, but the idea must still be conveyed in its full integrity. It is in this sense we must understand Fuseli's observation, "He that conceives a subject twice has not conceived it at all." Every subject has some peculiarity which distinguishes it from every other of its class; some point at which that peculiarity is most fully developed and which should be rigidly adhered to by the artist. The "dressing up" of this point of the subject, to which Fuseli limits the admissibility of second thought, is, in fact, the application of what should in strictness be called the art to the full development of the idea, with all the advantages the situation will admit of.

Gaspar Poussin.

Gaspar Poussin may fairly be considered as the father of landscape-painting; but it is quite another question whether he was enabled to bring the art to its perfection. Herodotus was the father of history, but not in so complete a sense as Homer was of poetry. Poetry, like printing, appeared at once in its mature perfection; history did not, nor, as far as we can see, did landscape-painting, nor was it likely to do so, if our assumption be true that it is the last product of a long education of refinement. In consequence of working out sketches into pictures in the studio instead of the open air, he never attained the faculty of representing exactly the differences of season, and of preserving the peculiar characters of each, which several of our modern painters have attained. Individuality appears to be his great want, whether in his figures, his trees, or his general delineations of scenery. There is nothing gloomy or sad in seasonal changes in themselves, and in immediate reference to man only when used as not the most exact similitudes of his destiny. Spring, summer, autumn and winter do not quite represent the infancy, maturity, decline and dotage of the year. Winter is slumber, not death, spring an awakening, summer a wide-awake state and autumn a drowsiness; or, spring is the morning, summer the noon, autumn the evening and winter the night of the year. The death of the individual leaves alone is symbolical of our own; but then we know that for every leaf that perishes another will come out just as good as the last, and as the tree grows in a more numerous generation. When we die, others will succeed us—better or worse than ourselves—but not the same. Shakespeare and Milton will never exist on earth again, and that is the strongest reason apart from revealed religion, and corroborated by the manifest incompleteness of every great man who dies, to lead us to believe that they exist elsewhere than on earth. Besides these considerations it seems that, as far as artistic beauty is concerned, no more promising result is likely to be attained from taking the characteristics of different seasons and mixing them together, than would be attained by the sculptor who attempted to form the ideal of female beauty by taking a pretty foot from one model and a handsome nose from another, without consideration of consistency. Each season has its peculiar poetry; and, indeed, an unvarying season is so contrary to manifest utility, to the possibility of the production of fruits in their time, that even imagination must reject it as hyperbolical. Only from tropical countries could such subjects be consistently drawn as would denote no change of season, and tropical countries are not the pleasantest. There is moral and spiritual character in Gaspar's trees, affectionate bendings and gentle influences, but they are not anatomically true, nor are they in the highest sense an expression of the incomparable forms of nature.

Greek Propylæa.

Although the Propylæa of the Greeks do not exactly answer to the usual notion of a portico, inasmuch as they are not immediately attached to nor form part of another structure, still they bear so close an affinity to them, both in purpose and in character, that they may without impropriety here be classed with them—at least, referred to as a particular variety of the portico *in antis*. Strictly speaking, the examples known to us are not indeed *in antis*, the antæ-ends of the side walls not being brought up to the line of columns in front, therefore so far they correspond with the monoprostyle species; yet with the exception of that difference there is a striking analogy between them and plans *in antis* or enclosed on their sides, while they at the same time exhibit peculiarities not to be met with in other porticoes, consequently suggest fresh ideas, some of which are so far from being hackneyed that as yet they have not been even once adopted by us. One highly remarkable circumstance, and what but for such indisputable authority would be considered an unwarrantable license, if not a downright barbarism in the production of a modern architect, is the employment of two distinct Orders one behind the other, which, moreover, are not so placed that the inner ones (Ionic) form a second range parallel to that in front, but are disposed in two rows at right angles to it, whereby the plan is divided into three avenues or aisles, the centre one of which is considerably narrower than the others, it being only of the same width as the centre intercolumn, while each of the lateral ones corresponds to two of the front intercolumns. A further anomaly is the greater loftiness given to the inner columns, for their capitals range with the upper moulding of the architrave of the external or Doric order, and their own architraves coincide with the inner frieze of the latter. In addition to all these circumstances, the Propylæum at Athens was further remarkable for being elevated upon a platform or terrace with a flight of steps leading up to it, and also for having low projecting wings attached to it of the same order as the centre, but upon a lesser scale; so that there were three differences with respect to columniation, viz. a larger and smaller Doric order and an Ionic one also; consequently a degree of variety—or, as some may call it, of discrepancy—in the composition which is almost unique in Greek architecture, but which surely affords sufficient authority for our emancipating ourselves from that monotonous formality which seems to have been taken for the very essence of the style.

Vallancey, the Irish Antiquary.

Of all the grave freaks of erudition, the sober antics of archæology, those of the gallant and venerable champion of Irish antiquity, General Vallancey, assert the strongest claims to recollection. The exceeding complacency with which he detects an ancient Punic gentleman speaking good Irish in one of Plautus's plays; his modest suggestion whether a gold collar, which had been picked up out of a turf-bog in the county of Limerick, might not be the actual Breastplate of Judgment—the Urim and Thummim of the Jews—the conclusion he comes to that the Iroquois Indians of North America must be the very same people as the Irish, because the former call the sun Grounhia and the latter call him Grian; and, not to enumerate too many such dazzling speculations at once, his discovery that Ossian was the Messiah and St. Patrick the devil—these and a number of other such erudite fancies which are to be found in the same antiquarian's writings should be cited as unrivalled flights in this peculiar walk of research. So long had Vallancey been accustomed to look at his beloved Ireland through an orientalising medium, that she grew at last to be as completely an Eastern island in his eyes as if the Green Isle had in times past been transported from the Sea of Oman, or some other such summer quarters, and dropped, much to its discomposure, in the cold, comfortless Atlantic. That there exist strong traces of an Oriental origin in the language, character and monuments of the Irish people, no inquirer into the subject will be inclined to deny. Vallancey himself, indeed, began with this moderate view of the matter, and his first works relating to Ireland abound with materials of knowledge, which must always render them valuable to her historians and antiquaries. But by dint of reading and writing for ever on the same theme, by labouring constantly at his favourite parallel between the Easterns and the Irish, he at last worked himself into a state little short of monomania on the subject. Not content with merely deriving the Irish nation from the ancient Chaldæans, Persians, Scytho-Iberians, or whatever other name he chose to give to their progenitors, he seems at last to have almost persuaded himself that the offspring has changed but little on the way, and that the Irish continue to be good Chaldæans, Persians, Scytho-Iberians, &c, to this very day. Not only does he often quote vernacular Irish writers as good authorities respecting Eastern affairs, but even intimates that they know much more of the matter than the Easterns themselves.

The Right Use of Precedents

In the ordinary routine of professional practice the legitimate use of precedent appears to consist in facilitating the study and application of the principles of the art, just as the student's pupilage in the office by displaying to him all the minutiæ of his employer's business furnishes him with precedents for his own guidance in collecting knowledge or in practice. But to distort precedent to any other end, to subvert it into a mere rule of thumb or into a royal road to emolument and fame, is to turn aside from the highway to excellence and to deteriorate more and more from the performance of our forerunners. From the example of our old masters we may deduce much valuable instruction, learning from their experience we may economise our own, and starting from a higher vantage ground yield to the whispers of hope and the promptings of ambition with a firm conviction that as, with increased knowledge and more perfect appliances, we aim at greater excellence, we shall at the least equal the noblest works which are preserved to us. Rightly studied precedent rebukes the indolence that "seeks delights and lives luxurious days;" that is ever ready to adopt the first feasible idea that presents itself as being "quite good enough for the purpose," it stimulates an honourable competition with excellence of the highest order, and prompts the doing on every occasion the very best that can be accomplished. Instead of vainly lamenting the degeneracy of the day, its mercenary and anti-æsthetic tendencies and so seeking to become unconscious of our own feeble efforts, we may learn from precedent to seize every opportunity for converting a merely useful feature into an agreeable embellishment. Let it be granted that this is an essentially utilitarian age, has not every age been equally so? The golden age has ever been placed in the shadows of the past or in the glimmering of the future—poets have ever deemed "the present" unpropitious to their art and all its kindred, yet still sing on—thrill the living sympathies of their contemporaries, and wake the responsive imaginations of posterity. Whether farming, fighting or trading be the staple occupation of our race, there is ever a yearning for pleasures that gratify the intellect, and free it from the wearying, the nauseating influence of routine occupations; there is a longing aspiration for manifestations of those principles of truth and beauty which speak to the divinity within us, and the history of all art exhibits the sure precedent that its most glorious periods have been coincident with the chief epochs of national prosperity.

Lancet Windows.

The greater number of ancient single lancets will probably be found in chancels, or in the east or west walls of nave-aisles, or transepts. They appear to have very generally vanished from most other parts of our old churches; not so much, we think, because they were found inconvenient from admitting too little light, as from the constant progress of improvement in the styles, and especially from the extensive substitution in the fifteenth and sixteenth centuries of large Perpendicular aisle-windows, for the principal purpose of admitting more stained glass. It may, indeed, be questioned whether (if we except towers) lancets were very generally used in other positions in the fully-developed Early English period; two-light windows, if we mistake not, having been generally preferred. But parish churches were usually small in the thirteenth century, much smaller certainly than the huge modern buildings of most scanty detail to which that style has been unwisely applied.

GENERAL.

Lord Armstrong, who will be reckoned among the greatest engineers of England, died on Thursday.

The Lambeth Board of Guardians' proposal to construct new offices and a nurses' home, at a cost of 60,000*l*., has been rejected by the Local Government Board.

Two Marble Statues and numerous marble and bronze fragments have been brought from the bottom of the sea between Cape Matapan and the island of Cerigo.

The Middlesex Volunteer Forces development committee propose that drill-halls should be provided for the 2nd Vol. Batt. Middlesex Regiment, at Uxbridge, at a cost of 2,110*l*.; for the 5th West Middlesex, at Hendon, at a cost of 1,600*l*.; and at Wealdstone, at a cost of 1,358*l*. Of these sums the County Council will provide out of the rates under the Military Land Acts, 4,400*l*., the remainder being provided locally.

The Austrian Government has appointed a committee of experts in arts and handicrafts to arrange for exhibitions of Austrian manufactures in the great cities of Europe. The committee has decided that the first exhibition shall be held in London in 1902.

Mr. Cornelius Vanderbilt has bequeathed to the New York Metropolitan Museum Turner's great work, *Grand Canal, Venice.*

The Incorporated Society for Promoting the Enlargement, Building and Repairing of Chapels and Churches have voted 9,710*l*. in grants from the general fund and 355*l*. from the mission buildings fund.

The Proposal to widen Newgate Street is postponed by the Court of Common Council. If the street were made 60 feet wide the cost would be 600,000*l*.

Mr. W. P. Churchward has received permission to wear the insignia of "Cavaliere" of the Order of the Crown of Italy, conferred upon him by the late King Humbert in recognition of services in connection with the construction of railways and tramways in Italy.

The Tunnel under Mount Jaman has been completed after thirty months of continuous boring through seven miles. Direct communication from Lake Geneva to the Montreux Valley will be insured.

A Subscription List has been opened for the purpose of raising 300*l*. to purchase a replica in bronze of M. Rodin's *St. John the Baptist*, which will be placed in some public gallery, preferably the Victoria and Albert Museum. A number of admirers of the famous French sculptor's work have already subscribed. The executive committee engaged in making the arrangements consists of Mr. E. Beckett, M.P., Mr. Brock, R.A., Mr. J. H. M. Furse, Mr. Alfred Gilbert, R A, Professor Legros, Mr. W. Rothenstein and Mr. Sargent, R.A, with Mr. John Tweed as honorary secretary and treasurer. Subscriptions may be sent either to Mr. Tweed, at 14A Cheyne Row, Chelsea, or to the National Provincial Bank of England, South Kensington branch.

The Death is announced at Mentone of Signor Gabriel Carelli, the gifted water-colour artist, who has been for twenty years under the generous patronage of Queen Victoria.

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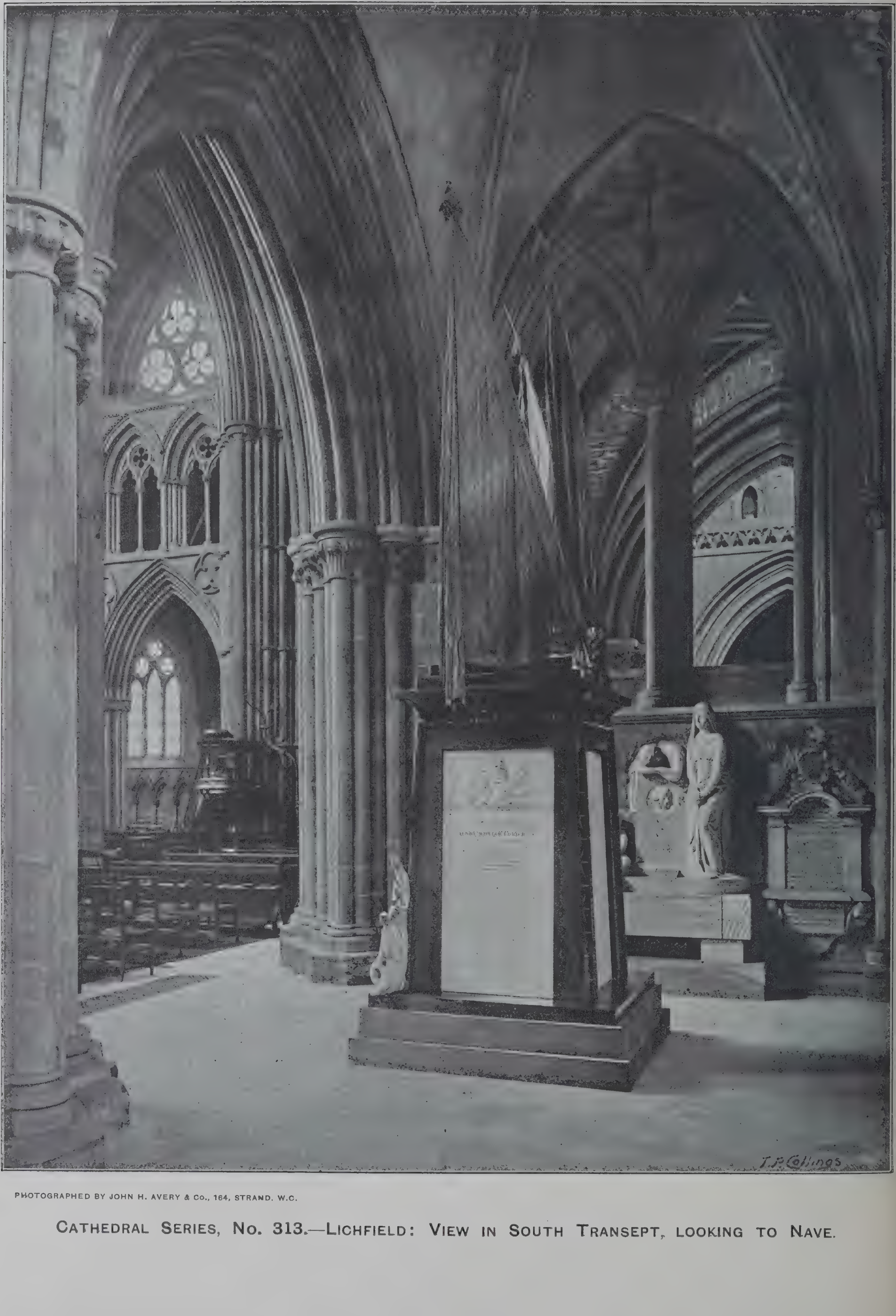

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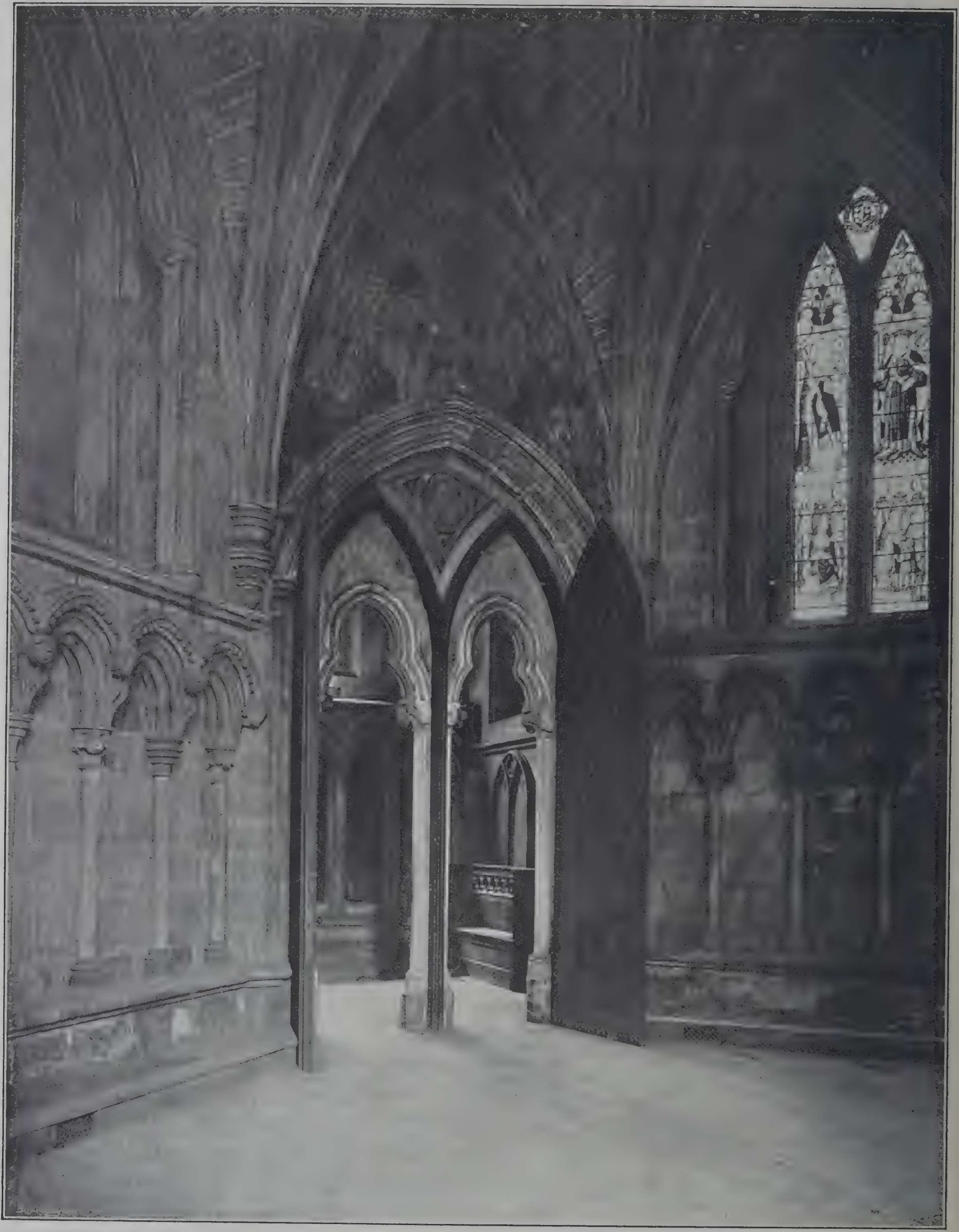

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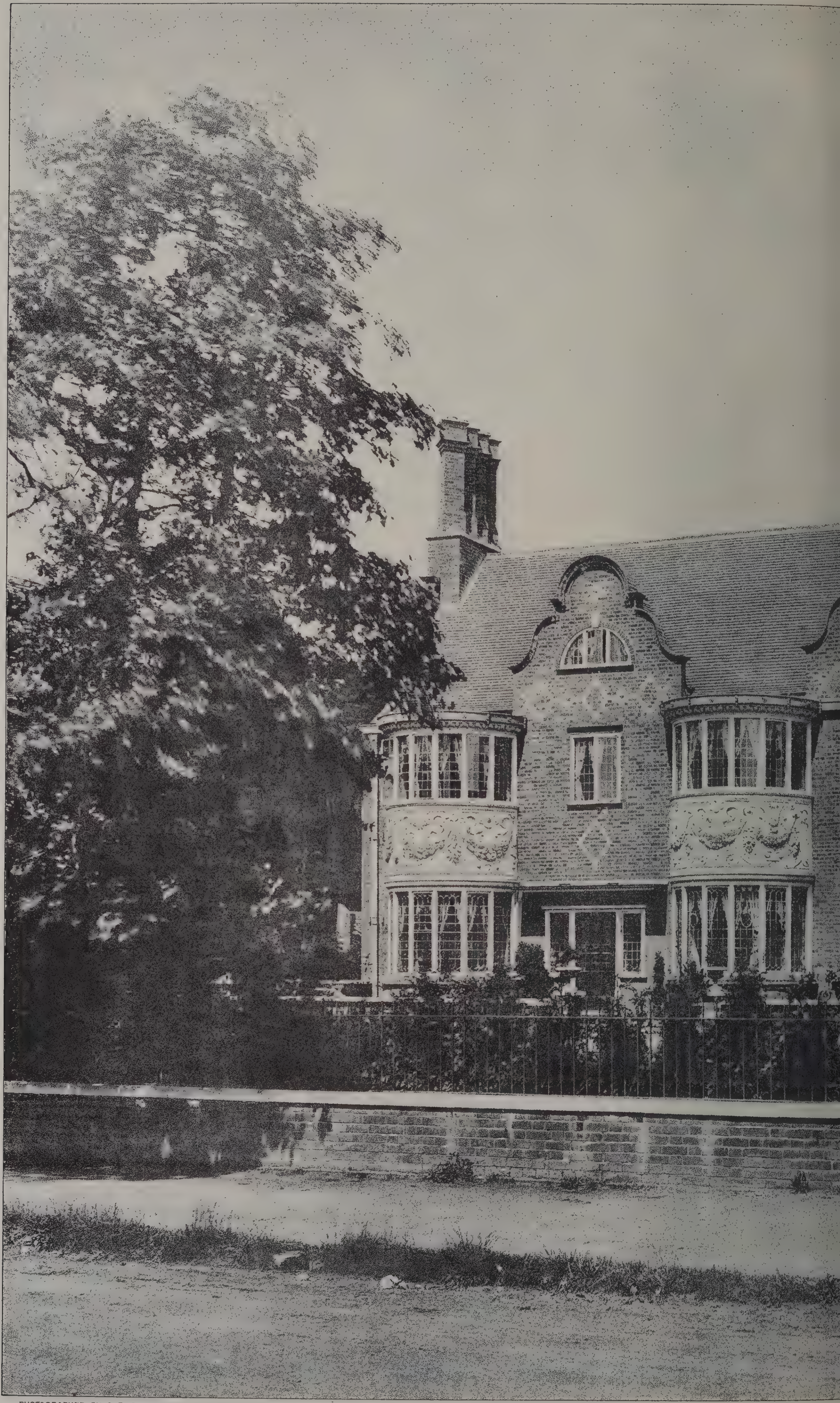

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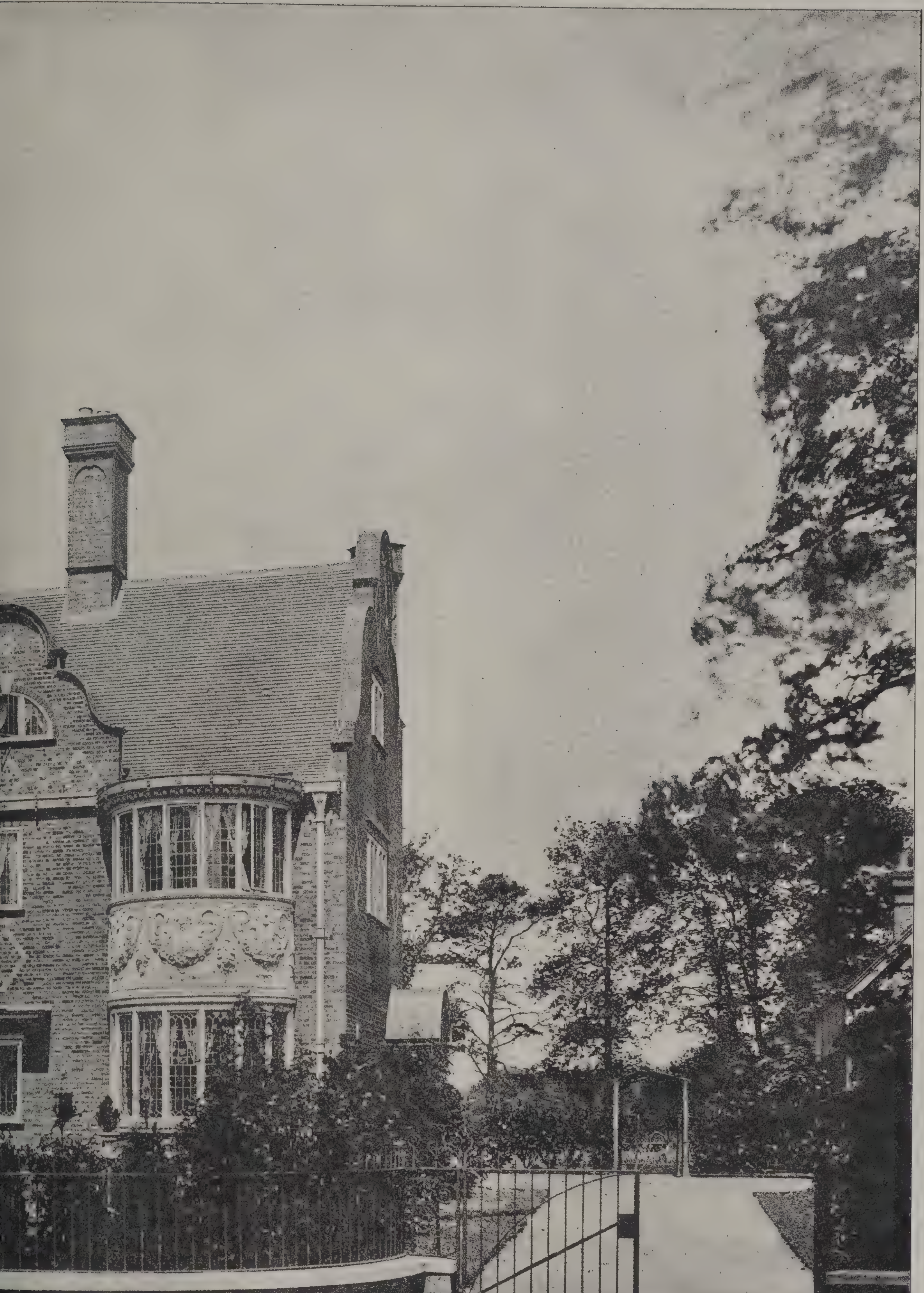

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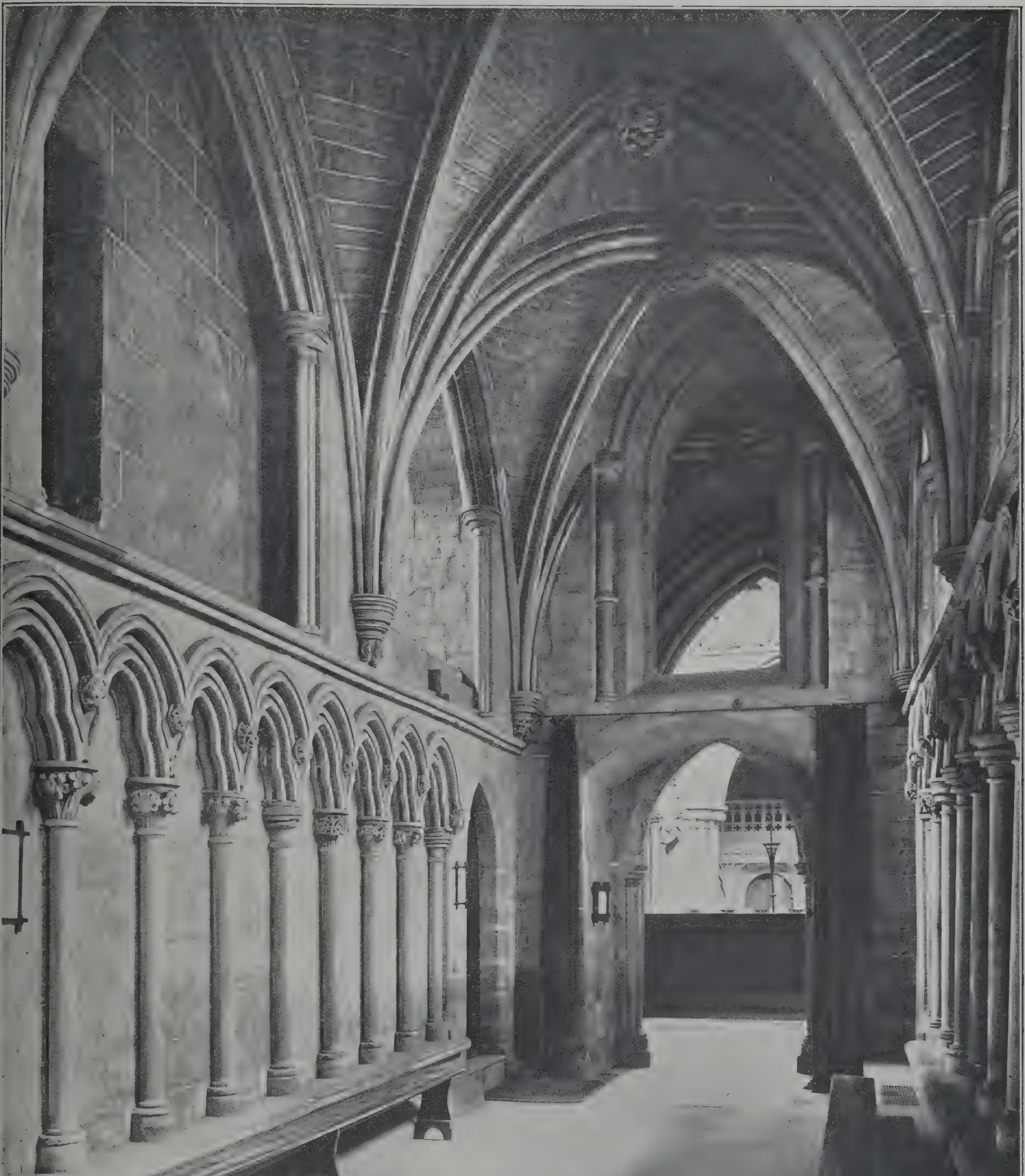

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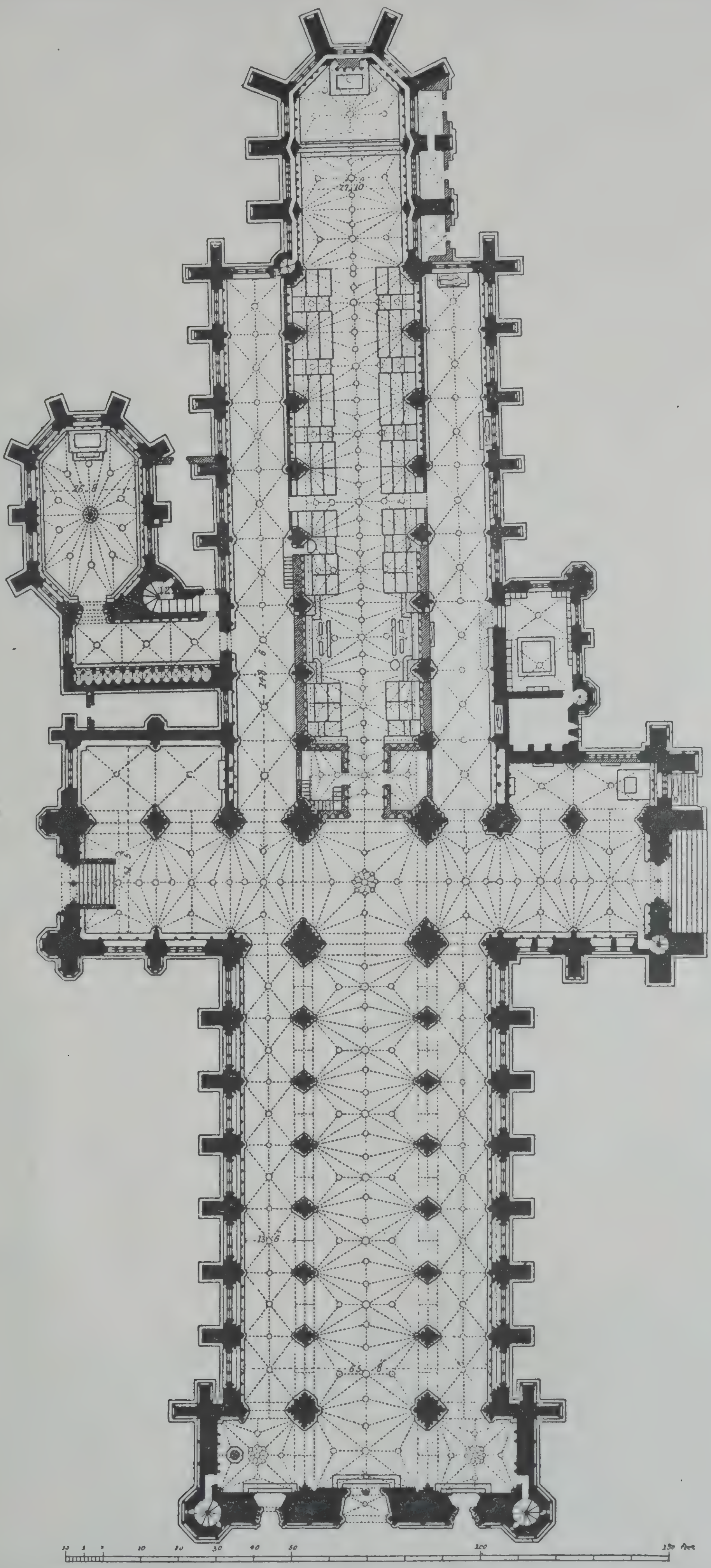

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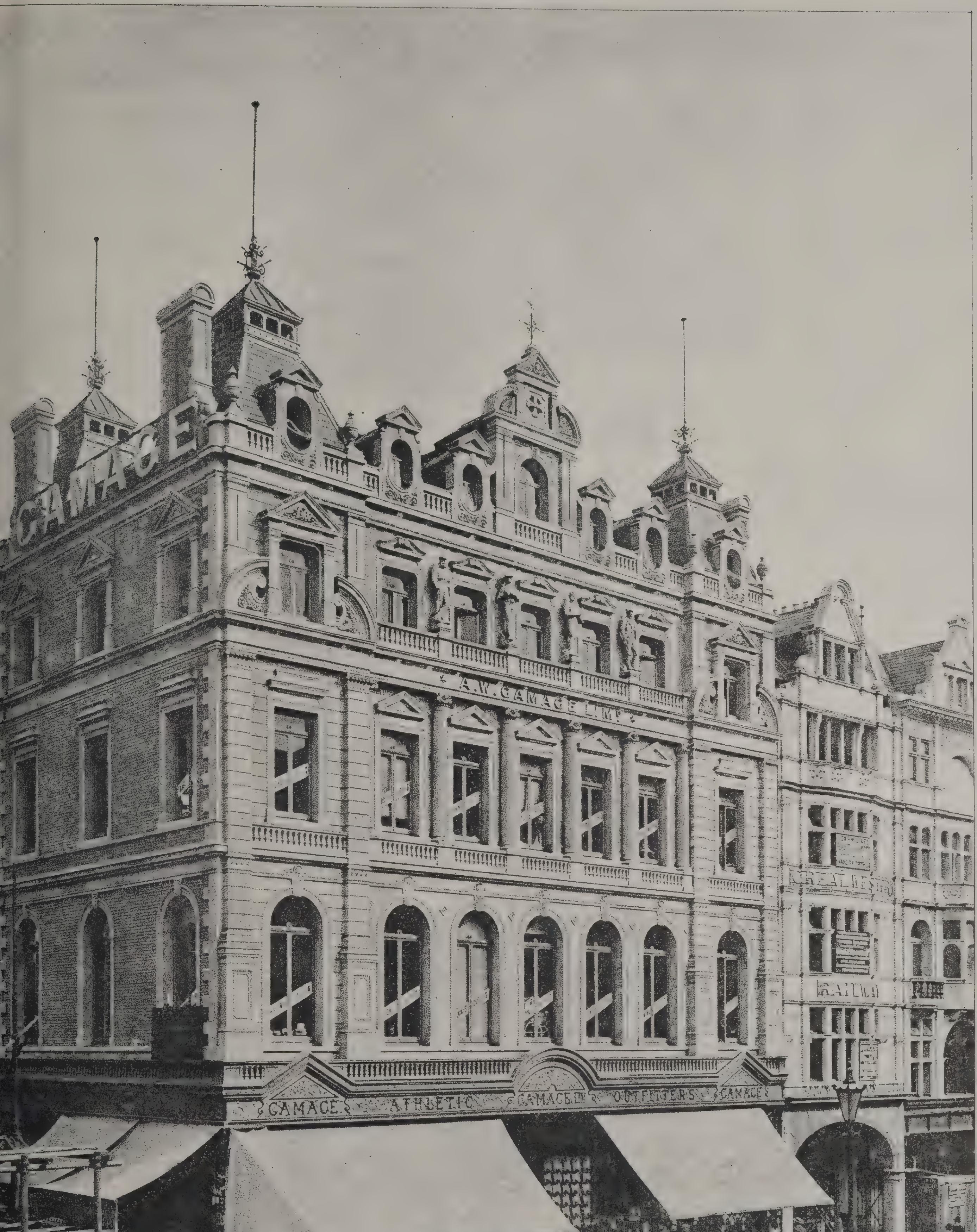

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